





UNIVERSITY OF CALIFORNIA  
MUSEUM OF VERTEBRATE ZOOLOGY













Marshall, J. T.

1941-1945

1. El Salvador, 1941-1942

Species accounts (additional accounts  
written 1942-1944).

2. Oregon to Eastern States, 1943-1944,  
miscellaneous.

Catalog

General account

3. Southwest Pacific, 1944-1945.

Catalog

Sight records of birds

Species accounts

Digitized by the Internet Archive  
in 2017 with funding from  
CLIR

<https://archive.org/details/fieldnotesv147200mars>



1.  
Marshall, J. T., Jr.

El Salvador — Birds 1941-42

Additional Species Accounts  
written 1942-1944







Marshall, Joe T., Jr.

June 11, 1944

## Species Accounts of El Salvador Birds

Every bird species <sup>seen by</sup> me in El Salvador, <sup>except hummingbirds,</sup> has a species account written. The localities where each was seen were checked off in my copy of Van Rossem in June August or Sept 1942 I believe. Accounts for Mt Cacaquistique were written in field as much as possible but many were completed & all <sup>birds seen there</sup> included when I wrote them up at the hotel in San Salvador & between Lake Olomega and Los Esesimiles. Accounts for Los Esesimiles were written up entirely in the field even including birds observed on return trip. These are the most reliable notes, therefore Lake Olomega, Volcan de Santa Ana, Chilata Accounts of species seen or collected in these localities was written up after returning to this country. Crypturellus to Amazona blue ink written up by Summer of 1943 & turned into MVZ & placed with Cacaquistique & Los Esesimiles notes. I believe. Piaya to Spizella completed by June 1944. Some of these latter species have been forgotten but could (over)

as to habitat  
be remembered, if I could  
look up in the catalog the other  
birds shot that same day.  
This last group is all in blue ink  
and with the date " (1942) " at  
the top indicating written  
up after 1942. There is not  
always only 1 sp. per page.

At the time of listing  
localities in Van Rossem  
I remembered clearly the  
occurrence of each bird.

My copy of Van Rossem,  
Zool Ser. Field Mus. Nat. Hist.  
vol 23 1933 is a very  
important catalog of the collection  
and should be considered  
a part of the notes.



Marshall, (1942)

Piaya cayana

Mt. Cacayatzine common in oaks

L. Olomega - - mixed woods, common

Volcan de Santa Ana A male singing  
daily during hot parts of day from  
tall dense hedge cypress back of house

Always concealed - sometimes on top of tree.

Series of strong whistles.

Chilata Noted along a wooded

stream-course, one pair in area  
where vines & thick growth along  
stream.

This bird was most common  
at Olomega in mixed woods &  
in oaks. At all times remarkably  
secretive and silent - the only  
time heard at all was the  
singer at V. de Santa Ana. Never  
seen on ground - always creeping  
about in foliage in such a  
way that despite their length  
they were always well camouflaged.  
tail rarely  $\perp$  to branch - they  
kept lengthwise. therefore despite  
striking color and form very  
inconspicuous.



Marshall, (1942)

Tapera naevia X

Lake Olomega

Heard only — from some tree every day — not as common as Dromococcyx. Called from a large dense tree standing in the midst of a very large area of low scrubby dry tree growth in flat land at wedge lake.

Song consists of 6 whistles:

— | — | -2 | -2 | the 3 & 5<sup>th</sup> short & 1/2 step higher than rest. ~~4~~ ~~stems~~ time intervals: 4 equal parts as shown.

I never went after this bird because the low growth mentioned was swarming with ticks.

The 1<sup>st</sup> 2 notes identical with

the 1<sup>st</sup> 2 in the song of Dromococcyx, and in both have a very slight inflection like an unsteady record.

Some mornings this bird heard up on dry hillside <sup>possibly</sup> indicating wide terr. (could have been different indiv.). At this time

surmised identity only by similarity to Dromococcyx.

V. de Santa Cruz (Cerro del Aguila)

The south slope of the west spur of Cerro del Aguila has been cleared.





marshall (-942)

*Caperia naevia*

V. de Santa Clara

about  $\frac{1}{2}$  way up for castor bean & coffee  
but some has grown <sup>and</sup> bushy like  
similar spot on Cacagatigue and here  
as a Cacagatigue bird lower tropical  
birds invaded at an altitude  
normally upper tropical i.e. ant shrike,  
and the present sp. Every day  
it was heard whistling (only one  
indiv.) on the dry slope east of the  
main canyon & steep & inaccessible.  
One day however I found it in  
bushy tract on west side where  
I went to it and for about 1 hr.  
kept in conversation with it. It  
answered my whistles ~~and~~ and  
often came so close that I could  
hear it walking ~~around~~ on the  
ground in the dense brush but  
could never see it. It changed  
the intensity of its calls very much  
often sounding very far away. Finally  
Q got on a road below it and  
in ~~answer~~ <sup>response</sup> to my whistle it got  
up on a top twig, standing upright,  
tail down, rest raised looking from  
side to side. Collected. Calls same  
as at Omega - very wide foray area but



Marshall (1949)

*Cyprina nauria*

V. de Santa Lina.

usually sticks to same song  
area. It is widely spread  
species therefore commonly found.

Chilata (the one seen and  
collected). When alone on a side  
road & flew straight to a  
fence-post where a group of people were  
around. I first thought it a  
jet bird & cleared out for it  
after my "reflex shot". It  
had come from the bushy front  
edge of bushy grove.



Marshall, (1942)

Dromococcyx phasianellus

Lake Olonga      Habitat: dense dry  
brush with frequent medium sized  
trees - 3 pairs ± within half  
mile of camp on S. side lake  
∴ more common & closer together  
than Lapera only on flat  
lowlands apparently. Usually  
heard from interior of tall  
brush patches. 1<sup>st</sup> spec. taken  
by calling up in brush patch  
several times perched for an  
instant on top of brush. 2<sup>nd</sup>  
spec. heard whistling in large  
tree in foreground. Went under  
the tree & whistled at it &  
it was very curious & tame  
& came within 2 yds. looked  
about in the foliage often high  
up and answered my whistles.  
A striking bird and not well  
concealed (like squirrel cuckoo).  
Call: 1<sup>st</sup> 2 long whistles  
partly same as in Lapera; these  
followed by trill like a  
blast from a police whistle.





Marshall, (1942)

Mosocoryx erythropygus

Lake Omegea I saw only 3 pr.  
all in <sup>trunks</sup> at edge little brush patches  
surrounding open fields. They  
would usually retire in the  
brush & one was seen creeping  
around on the ground in brush  
pile. Not much obs.  
apparently strictly ground forager,  
and in sparse brush where  
open trail or field available.  
Very tame, slow-moving. Only  
seen near camp on flat co. on  
S side lake.

1990

Marshall (1942)

*Geococcyx velox*

V. de Santa Ana

Only specimen seen and  
shot as it ran across plowed  
field on ~~logged~~ off n. slope  
(base) of V. de Santa Ana. There  
was much brushy area here due  
to removal of original forest cover.

W slope Los Encarniles (Apr. 6)

One taken as ran from patch  
dry leafless brush patch lower  
edge the pine forest - across plowed  
field.





Marshall (1942)

Crotophaga sulcirostris

Lake Olomega

The most abundant bird in the flat country on S. side lake around camp where flocks up to 50 around edges of fields or boggy pastures. Always a flock along stream back of camp drift along thru brush & low trees and in midday perch in long rows on branches <sup>from</sup> <sup>in densest thickets!</sup> <sup>and</sup> shoulder to shoulder. Always a lot of conversation in low soft <sup>liquid</sup> tones: a single "wick" and longer clucking phrases. Fly very slowly and always low from bush to bush - short dist. only. Members of flocks keep close together. Walk on ground a lot. When pursued, a flock can remain very silent & inconspicuous. Never far out in open away from brush or sm. trees.

V. de Santa Ana - Laguna de las Ranas This lake bed was about 500 ft high & was heavily forested all around except for one logged patch where there was some brush. Cows pasturing around grassy edge. A flock of about 25 was foraging among the cattle at edge of this clearing & when pursued retired into edge of the heavy "cloud" forest where



Marshall (1942)

Crotophaga sulcirostris

Laguna de las Ranas

They were very silent & well concealed - each indiv. getting into densest foliage & one by one slipping farther away. Very wild compared to those in settled regions. Had been foraging in grass with cattle. Chilata abundant - flocks looms this time of year - in brushy gullies around farm yards. Only around settled areas where open ground.





Marshall (1912)

## Tyto alba

Lake Omeiga seen flying over flat-  
land at s. edge lake in early  
evening. Heard several other  
times.

San Miguel at every stay heard  
their shrieks at night as they  
few to & from lg. church  
tower across st. from China Hotel.

San Ignacio } heard at night.  
Chilata }



Marshall (1942)

Otus trichopsis

San Ignacio April 6, 1942

♂ heard whistling at night in  
sinos 2nd stay Apr. 6. B to same night

Cerro de los Naranjos

N. side base at 4500 ft where  
coffee finca at edge open field. A  
pair hilled at " finca at dusk.





Marshall (1942)

Otus choliba ??

L. Olomega

Faint Otus calls heard  
by several members of  
party and by myself 5  
times various nights. One  
heard call 3 or 4 times  
at stream back of camp  
but could never "call up"  
nor would birds ever  
continue calling long enough  
to locate.

Last night at  
Olomega station heard some  
notes similar to Otus but  
rather gruff and changing  
in pitch low in tone at  
edge town along railroad  
track. It kept in conversation  
with it for quite a while  
but was never certain that  
it was actually an Otus the  
notes came from so close to  
the ground. I didn't have a  
light or gun.



Marshall (1942)

Rhinoptynx clamator

Lake Olomega 1<sup>st</sup> night at Olomega  
native hunter brought back ♂  
#1768 - said he had taken it  
from woods on mt.-side but  
he had difficulty understanding  
our spanish & he probably didn't  
understand what info I wanted.

probably taken near grassland.  
Jan 26 Stint & I stalked a  
bird hooting from top row  
of bushes 10' high in tall  
grassland near swamp &  
edge lake all open country.  
Gave single hoots, 2 or ten  
with several seconds between them  
long silence. Responded to un-  
stated hoots but didn't move.  
Quality & form of call identical  
to long-eared Owl. We stalked  
it & saw it by flashlight  
a long way off because it  
showed up white against dark  
green bush. Shot at long range.  
Call always same pitch &  
uninflected. No moon.

February 6 Moonlit PM same open  
grassland. Heard ♂ & ♀ in conver-  
sation out near edge lake. gave





Marshall (1942)

Rhinopteryx clausener

L. Olomueya Feb 6

imitated calls from where  
was in distance fly. trees across  
the grassland and both  
members of the pair came up  
into the trees over my head.  
Conversed for long time attempting  
to shine them. F's call higher  
than M's. They flew back to  
over the grassland, but I finally  
got the ♂ to come back &  
perch on exposed dead branch 15' above  
grass looking at me ears  
str. up, looking vertical body  
position. Looked just like  
Long-eared Owl. Good eye shine.



Marshall (1942)

*Glaucoedon brasilianum*

Lake Olomega

Often heard late at night esp. moonlit nights on W side lake here mixed veg. including very large trees. Usually paired - a high & a low voice calling near together, sometimes in same tree. Coll. one on growth approaching swampy forest type. A pair often heard up this wooded ridge above the lake.

One *Glaucoedon* - no type in broad daylight, flying from one small *Glaucoedon* of some kind of leguminous small mixed tree) to another in grassy area on S side lake. Pairs here, habitat extremely varied

San Ignacio

One seen in <sup>evening</sup> day time Stirton & Guelley.



Marshall (1942)

Cicaba virgata

Lake Olanegua Not quite as common as at Cuayutla, but pairs heard almost every night. One <sup>seen</sup> moonlit room then near around spring where (C. virgata was stayed) about the same time every night. One shot in early evening ~~is~~ up a canyon above the spring - from high in tall tree.

♀(?) taken by spring under big tree edge swamp forest one early evening. Calls atypical. Perched 6' from ground. Los Esesmites One ♂ heard on 2 moonlit nights from camp. Call came from below cloud forest. Only 1 noted.

V. de Santa Clara Pair followed & called into trees right overhead - followed me long way in <sup>thick</sup> planted cypresses up hill n. camp.

One ♂ called up & seen very close 10 ft perching close to ground (4-6') when still light in edge forest at base Cerro de los Naranjos. Chilata Heard from Palmar at night.



Marshall (1942)

Ciccaba nigrolineata

Lake Clomega For several nights  
before Jan 29 and at same time  
each evening (10-11 pm) ♂ would  
call from <sup>high on</sup> ridge SE camp for  
½ hr. or more then move  
into the canyon above spring  
& call there & ♀ would also  
join. Same performance with  
gt regularity <sup>each night</sup>. Call ~ C. virgata  
percussive bark but preceded  
by 4 barks ascending in  
pitch thus: hoo, hoo, hoo, hoo  
hoo, hoo, hoo, hoo

gt. crescendo towards the 2 main  
hoots which were exactly like  
those of C. virgata, in both  
sp. these give the impression of  
2 shots of a remote & muffled  
shot gun "both barrels"! ♀  
definitely higher than ♂. (on  
Jan 29 I, went up <sup>canyon above camp</sup> to the  
spring when ♂ started hooting  
& gave a few calls. immediately  
both birds came & flew back &  
forth between 2 trees perching in  
each & coming out over my  
head where I was standing.



71

72

73

74

Marshall (1942)

Ciccaba urophasianus

L. Olney Jan 29

in open space along creek. They called often & were very excited as if nest close by. Eyes were like great <sup>eight</sup> red lights - beautiful shine even in flight. Hard to see when perched & I had to work over an hour before I finally shot the ♀. Chased them several hundred yards among the great trees on the hillsides & confluence of creek beds around the spring. But the ♂ shot at several wrong things: a cat in the coyotes, a whippoorwill, & C. virgata but despite the shots the 2 owls always stuck around the usually perching very high & on top of densely-foliated hairy branches so I couldn't see them.

Jan 30<sup>th</sup> Same performance & I took the male this time. Habitat: Very definitely the large dense trees in ravines on hillside above the lake. The same spot where all the other hawks and owls taken i.e. trees surrounding Stirt's mammal live trap. No others ever called up - this many places.



Marshall (1942)

Pulsatrix perspicillata

Lake Olomega 1<sup>st</sup> spec. taken in eve.  
when still light from <sup>avenue</sup> <sup>EB</sup> trees along  
a road across the grassland on S  
edge lake. Very tame & sluggish  
flight. Perched conspicuously in  
bare branches half-way up in  
trees. 2<sup>nd</sup> taken late at night  
in heavy mixed trees & bushes  
on slope SE camp between  
camp & spring. I stalked it  
a long while attracted by its  
very peculiar calls & finally saw  
it on top dead stub. ♂.  
Call: 9 gruff grunts in even  
rapid succession very breathy,  
in quality & very in-out like.  
Most like a noise made with  
wings than vocal. shu-shu-shu-shu  
shu-shu-shu-shu-shu. Very  
low and hard to place. Sounded  
very close although bird 50 yds or  
more away most of time. Not  
in big trees - just mixed dense  
growth. 3<sup>rd</sup> taken in daytime  
when I saw it sitting on 1<sup>st</sup> branch  
large tree at over trail at boat  
landing. Flushed several times, going  
to big branches near trunk dense trees each time.

*Journal of Management Studies*, 19(1), 67-80.

Marshall (1942)

*Nyctibius griseus*

Lake Olaniga

Spec. taken by Davis "106"  
in woods. # 85675-b taken  
by Stinton in grassland.  
Both at night





Marshall (1942)

Caprimulgus vociferus vociferus

Lake Olomega Frequently seen -  
could collect one in every  
night of intensive collecting.  
Could be told by very red  
eyeshine & always up in  
trees - sometimes even top or  
conspic. branches. Nyctidromus  
almost always on ground &  
larger, yellower eye.

Collected in avenue of trees  
across grassland, in small  
tree edge of grassland & marsh,  
large tree out in " ". Often  
seen (red eyeshine) sitting still  
for very long time 15-20 min  
in high dense branches in  
lg. trees up canyon above  
camp when looking for owls.

Never heard calling at any time.  
The next commonest Caprimulgiform  
at the lake, perhaps one to  
every 30 or 40 Nyctidromus and  
4 or 5 to every Texas night hawk.  
One flushed in daytime in <sup>valley</sup> ravine  
above spring. Perched lengthwise of  
branch, blended well - flew very  
noisily - no white - ♀ collected.  
Lg. trees in mixed woods: Not in Swamp Forest



Marshall, (1942)

Nyctidromus albigollis

Lake Omegea The most abundant  
nocturnal bird but limited  
to open country, fields, edge  
of lake, ~~canyon~~ dry washes  
and road across open country  
w of camp where bare  
ground for sitting. Along  
the road mentioned above, could  
see or hear one every few  
yards. Very bright yellowish  
eyeshine. Always on ground - bare  
ground and very tame.

Hop up in the air a foot  
or more. Any eyeshine seen  
in trees & shot at would  
prove to belong to Texas nighthawk  
or Whip-poor-will. Great amount  
calling every evening while we  
were there, almost all night  
on moonlit nights. Very loud  
& rasping call at the, pleasing  
when heard at a distance.

quint, quint, quint, <sup>wee</sup>coo <sup>rolling</sup>oooo. Only  
time seen in woods was of on  
nest near ~~at~~ base tree at edge woods  
(10' from road) on W side lake  
which was only a few yards



Marshall (1942)

Nyctidromus albigollis

L. Olmegg : from open co. at edge  
lake. Only a depression in  
bare ground. 2 eggs. I allowed  
very close approach but I  
couldn't touch ~~her~~ her. Visited  
the nest in daytime - often in  
full sunlight. Found in  
middle of Feb. Hadn't hatched  
when we left.  
Colima - heard moonlit night when we were  
crossing Rio Tempa on way to Los Encinos.  
Chilata Heard at night.



Marshall, (1942)

Chordeiles acutipennis

L. Olomega Not as common as aprimulus. ~~but~~ ~~seen~~ Two taken, one or 2 others seen.

1<sup>st</sup> Taken from perch in tree along road thru open co.

W camp on 1<sup>st</sup> evening at the Lake. 2<sup>nd</sup> in morning as it perched in broad daylight in lg. dead tree in dense woods just E camp. At this tree I had ~~so~~ just shot a Microtus and ~~the~~ which had stuck up there; then the night hawk 'alighted' & I shot it. Then I went back to camp for a rope - left my gun there (!) & arrived at the tree where a Crane Hawk was now sitting. ~~Sto~~ Startled one from a roost in dry thin woods W camp one afternoon.





Marshall, (1942)

Chaetura richmondi?

Lake Olomega

Jan 22. Several noted at Olomega landing in am. Small-black.

V. de Santa Ana: See Condor article. Courtship <sup>repeated every min. of more</sup> took place over fixed circuit along main canyon up Cerro del Aguila & around <sup>& through</sup> certain large trees there - at terrific speed.

The flocks of Streptoprocne and Chaetura never mixed here, as far as I could tell, altho they would appear at the same places at different times.

~~Chaetura~~

Chilata - Courtship flight by pairs only, seen among balsam groves. ~~Flocks would~~

~~mix with Streptoprocne over grassy knoll in late afternoon.~~

Call note - vigorous staccato kip, kip, kip, kip, given especially when chasing each other in circuits around trees. Call heard overhead before swifts come into view. Becomes more intense & twanging in courtship - almost like call of Eutamias. Only single notes.



Marshall (1942)

Aëronautus sapatilis

Los Esesmites noted several  
times along crest.

Summit Volcan de Santa Ana -

8-9 in loose formation  
would fly close enough for  
shots at the rim of the  
volcano but I didn't hit  
any.



Marshall, (1942).

*Streptoprocne zonaris*

noted only at Mt. Cacaguatigie, V. de Santa Ana, Chilata, but common & conspicuous in each place.

Our camp at V. de Santa Ana was located in sort of a wide pass between two cones and thru this pass the large flock (50+) collared swifts would stream majestically past at about the same time each afternoon, and often on cloudy afternoons always same direction - ~~sw~~ south. The flock would always be in fairly close formation and the birds always flying in perfectly straight lines with no deviation for foraging. This made a very impressive and dignified show like a squadron of airplanes passing in review. Generally they would come past as low as ~~as~~ 150 - 200 ft. but I never succeeded in killing any.

At other times small groups could be seen foraging very high over camp & their



Marshall (1942)

Steptopneque

V. de Santa Ana high-pitched  
squeals often could be heard  
when the birds were too  
high to be seen.

Chilata - see London article.

Often in the am. the  
flock would appear from higher  
up (announced by squeals)  
& forage over a cleared  
ridge on Cerro del Aguirre for  
a short time.





Marshall (1942)

Trogon violaceus  
~~Chlorostilbon~~ canivetii

V. de Santa Ana

♂ 2287 coll.

as sang from high in lg. fig  
tree in ~~heavy~~ heavy forest here  
Cerro del Aguila cleared of  
undergrowth (for planting coffee).



Marshall, (1942)

Trogon melanocephalus

Lin Olomega Rather common on  
the wooded mt. slopes back  
of camp. Dry mixed growth.  
1<sup>st</sup> pair seen ~~in~~ in trees on  
dry ridge above the spring;  
male "singing" succession  
of hoots of same pitch.



Marshall (1942)

Amazilia rutila

Trogon elegans

Lake Olomega. — (Like T. melanocepala)

~~(not little)~~ strictly confined to the natural cover on the slopes and dogwashes + ~~can~~ in the Cotinas de Jucuaran - this consisting of the dry riped woods. At the head of one canyon I first heard their hoarse cry & thought them cries from very high in some large fruit-bearing trees & thought them to be Penelopes, & the next day we tried to track them down. They called regularly ~~to~~ once every 10-15 minutes & finally by giving an imitation got a bird to come low & saw & heard it at some time - a T. elegans! Call as descr. in Van R. Very deep and harsh sound like a mammal. Feeding on fruit in these high trees Probably.

Chilata - noted



Marshall, Joe (1942)

Megascops aleyon

Goterra, Dept Morazan (ie. SW side)

- Mt. Cucaguate

Davis & I saw this  
Kingfisher perched on a wire  
over the stream on edge of  
the town the 1<sup>st</sup> day I  
joined expedition. I shot at  
it with a sling shot but missed.





Marshall (1942)

Megasceryle torquata

L. Olomega

Bill Gealey, 2

believe, coll. this specimen  
along the Rio San Miguel.



Marshall (1942)

Chloroceryle americana

L. Olomega First seen about Jan 22 - the first day I was there about 100 yds. upstream from camp. The stream is ~~is~~ only about 3' wide but has little minnows in it. The kingfisher flew from farther upstream, thru the dense growth along it & perched near me for a while.

Feb 15 Collected Later found to be common around edge of lake ~~where~~ in ~~the~~ lowest branches of very large trees overhanging the lake - shady situations, and close to dense trees.

Chilata A pair noted at river near camp. River about 10-15' wide, and little growth along it where the kingfishers were. None other seen in region altho. I went along all streams looking for Mango Flycatchers.



Marshall (1942)

Chloroceryle alinea

Lake Chomega - Noted at edge of  
Lake (near landing) where  
trees overhanging water providing  
shaded & protected foraging areas.



Marshall (1942)

*Momotus lessonae*

*Megascops torquatus*

V. de Santa Ana Noted occasionally.

A pair watched in dry forest at  
edge Laguna de las Ranas 5500 ft  
on April 16.

Chilata noted.





Marshall (1942)

Ennomota superciliosa

Lake Okomega Occasionally noted  
single in flat grassland w/ camp  
where leafless shrubbery 20' high  
and few large trees. Unill  
in the shrubbery.  
Chilata - noted.



Marshall (1942)

Pteroglossus torquatus

Lake Chonoma A most up-close  
looking and sounding bird.  
Bills always caked with  
fruit. Seen several times  
in small groups (4-5), at  
in mixed <sup>open</sup> woods of large and  
small trees - as along stream  
back of camp and area on  
SW edge of lake.



Marshall (1942)

*Antacercyrus prasinus*

V. de Santa Ana      Large noisy  
flocks encountered in small  
scumbly tree growth at  
edge or above ~~not~~ <sup>edge of</sup> main forest.  
These birds were responsible  
for destroying much of the  
passion fruit crop. They  
always decayed readily to  
stuffed out.



Marshall, (1942)

Ceophloeus lineatus

Lake Okomega, Chiketa . Not as  
common as at Lacagnatigue  
but common in mixed  
woods and ~~edge clearings~~  
in dense swampy forest of  
Okomega.





Marshall (1942)

Centurus uniporus

Lake Olonega, V. de Santa Ana,  
Chilata. As at Cacaguetique  
found commonly in trees around  
habitations, clearings, &  
coffee fincas. Not in virgin  
"cloud" forest at V. de Santa  
Ana, only in fincas.  
Very noisy, conspicuous on  
exposed bare limbs and  
in groups.



Marshall (1942)

*Vireo rubiginosus*

Lake Olanegua : Heavier timber  
such as along washes in Colinas  
de Jucuaran + surrounding forest.

Chilata : Only in the few  
areas where natural  
cover still exists.

Calls ~ flicker.



Marshall, (1942)

Veinloria fumigatus

Lake Okomega Fairly Common, but  
only in dense swamp forest  
at W side of lake. Always  
paired. Males located by their  
drumming <sup>or</sup> tapping. Very  
wild, hard to approach, very quiet.  
Feeding on small <sup>insects</sup> ~~insects~~. Can  
climb & larger branches of  
medium sized trees.



Marshall, (1942)

*Phlaeoceastes guatemalensis*

Lake Okomega

Noted in ~~forest~~

Large tree growth. Drumming  
often heard from hillsides  
in colonias de Jucuarana.





Marshall (1992)

*Xiphorhynchus flavogaster*

Lake Olonega Common in heavy  
swamp forest where pairs  
seen; noisy, pursuing  
each other. On large  
branches a bigger trees.



Marshall (1942)

Lepidocolaptes souleyetii

Lake Olanegua (common in  
mixed woods)



Marshall, (1942)

Synallaxis erythrothorax

Notes: 3 ascending, 1 lower; or 2 up, 2 lower

Lake Okechogee - Restricted to patches

of dense brush around edge  
of marsh or sloughs  
either with or

without open tree growth,  
but not where dense forest.

Always paired. The nests  
seen. Was certainly not

as common as we had  
expected and it was a couple  
of weeks before Davis got the  
1<sup>st</sup> one. CV certainly likes

all would be calling together  
after this in early am.

Call very distinctive; Petulant  
and "snapped" out. Most

common in brush patches along  
banks of winding slough on west  
side lake where slough  
went thru very open forest.



Marshall (1942)

Thamnophilus dotiatus

Lake Okomega Pairs common in densest scrubby forest of low trees and high bushes in flat country on S & SW sides of lake. Commonest in dense growth just E of camp where almost inevitable & scrubby trees formed continuous roof of foliage about 20' high. Trill has peculiar "sub-assume" wooden quality, slightly ascending in pitch except to last note accented, last lower in pitch. Very tame. Crest lower & excited when trilling; tail vibrates with each note.

Volcan de Santa Ana Several pairs present in dense brushy areas on slope Cerro del Uchmita where forest cleared off. Some places where Lupera found. Chilata = Note.

20



Marshall (1942)

Chirotophia linearis


Lake Olomega Only 2 seen. (Not a time)  
These perched 6-10 ft  
in small trees in mixed  
open woods on flat land E side  
lake. Flight very fast and  
rapid.

Clivata Common. Groups containing  
4-8 generally encountered in  
undergrowth or lower trees in forested regions.  
One evening heard "toto" notes  
in a balsam grove and thought it was some  
kind of coucou - exactly  
same full penetrating quality  
of poorwill. Unwed out to be  
2 manichins sitting side by  
side their calls just a very  
slight bit out of phase so  
that it sounded like a  
single call with reverberation.  
Found in cooler shaded wooded  
areas.

100

Marshall, (1942)

Attila spadiceus

Lake Chonoma On the west side of the lake was a flat area with a very luxuriant mixed growth of large trees, small trees and patches of dense brush. A great variety & number of birds always encountered here. Some, like the Attila, and even Bent-billed flycatcher were found here only. Both my Attila specimens were shot here as they perched high in the taller trees. The male was singing a very fine performance of descending series of ~~soft~~ <sup>double</sup> whistles.  Little activity - sat very quietly & motionless. Posture upright like Kingbird.



Marshall (1942)

Platysaris aglaiae

Take Omega Pairs common  
especially in trees near  
farms or clearings.  
Look like flycatchers except  
much chunkier, slower, and  
very phlegmatic. Calls  
varied & harsh. Generally  
quiet. Very open country  
only.

Chilata Only 2 pairs seen  
One in l'akpa roop, one  
at nest on tree leaf  
tree in pair on leaf  
Nest under leaf opening  
a hole in side.



Marshall (1942)

Tityra semifasciata

Lake Olomega Small flock  
noted one day in tall wave  
tree in camp.

Volcan de Santa Ana Flock of 25 on  
top of largest  
trees at base of Cerro del Aguilón.  
Some place where colony of undulatus  
assimilis Feeding on fruit.

Harsh wind notes.  
Chilata call trees.





Marshall (1942)

*Sayornis nigricans*

Chilata (1 pair about  
every  $\frac{1}{2}$  mile along the  
two largest streams in the  
area generally where  
steep-walled rocky gorges. Strictly  
limited to watercourses of  
good size. Very quiet  
at this season only the  
single call note heard. Always  
paired.



Marshall (1942)

Muscivora forficata

Lake Olomega      Probably 1000  
individuals, very loosely flocking  
ranged throughout the open  
scrubby woods at the boundary  
between the grassland and  
dry foothill forests at the SW  
corner of the lake. This  
particular area was overrun  
with locust at the time.

San Salvador      February?      Each  
evenings, birds would come  
in over the hotel and perch  
everywhere on wires - apparently  
bedding down.

April?      Thousands upon thousands  
present each evening flying  
generally westward toward center  
of town, perching row after row  
on all available wires. There  
were several large dense trees  
in the square below the hotel  
and hundreds of the birds  
were attempting to alight in  
them. Each one fluttering in  
would frighten one already  
there because every available  
twig was taken. This



Marshall (1942)

Muscivora f. fuscata

San Salvador made a striking  
picture like corn popping  
or a geyser of birds.  
May - none present.

Flight halting and  
zig-zag Absolutely no  
organization as flocks



Marshall (1942)

Tyrannus tyrannus

Chilata

One collected  
in fruit trees in most  
level & open place in the  
area.





Marshall (1942)

*Myiurus verticalis*

Mt. Lacagnatigne - small groups - not flocks  
Lake Olomega - middle of February  
1 day a flock of about 20  
came to a tall bare tree  
at camp. Do not fly &  
perch close together as do  
warblers.

Volcan de Santa Ana <sup>Loose</sup> flocks or  
individuals noted daily flying  
to top dead snags on denuded area  
S slope Cerro de las Naranjas.  
Chilata Sm. Loose flocks occasionally  
seen.

Mt. wing - only single  
call heard.



Marshall (1942)

Tyrannus melancholicus

Like Clonema <sup>Common</sup> in trees  
in open grass or marshy country near  
edge lake. Single or paired.  
Liked to hunt from trees  
at very edge of lake.  
Calls and activity " subdued"  
compared to preceding as K.R. states.



Marshall (1992)

Mniodynastes luteiventris

Volcan de Santa Ana Only  
in <sup>tall trees in</sup> coffee fincas on flat  
country shown in photo in  
Condor article. Shade trees  
had been thinned and  
the zonal appearance of the  
fincas was thus more  
like "Lower Tropical". These  
birds occurred in 2's or 3's  
and were noticeable around  
tall dead snags. None were  
seen prior to date of 1<sup>st</sup>  
specimen & became more  
abundant after that. Very  
noisy, always chasing each other,  
varied calls. Besides conspic  
perches, often alighted in dense  
foliage (fruit eating?) lower down.  
Variety of postures - not the  
usual stiff erect flycatcher pose  
turning head side to side.  
Chilata: Pairs frequently encountered  
in barlams next to open fields.



Marshall (1942)

Myiozetetes similis

Goterra, Dept Morazan December.

Numerous in park - feeding  
on fruit in palm trees.

Lake Olomega Abundant everywhere  
in green country. (conspicuous  
and noisy, pugnacious).

Volcan de Santa Ana In cultivated  
areas fincas, etc. up to 5000 ft.

Chifata Abundant seen everywhere.

Especially along except in small  
cool woods.





Marshall (1942)

Pitangus sulphuratus

Lake Okechobee Probably the most  
abundant as well as most  
noisy <sup>active</sup> and conspicuous bird in  
open country. Even in  
hyacinth bogs on E edge  
lake perched on stakes to  
snatch insects for their  
flycatching



Marshall, (1942)

Myiarchus (except tuberculifer)

Lake Okechobee All the Okechobee  
birds were silent, solitary  
birds taken from middle  
parts of leafless trees growing  
along road across grassland  
w/ camp and along wash  
same area.



Marshall (1942)

*Myiarchus tuberculifer*

Lake Chapala, Vile Santa Ana, Chihuahua  
as at Caranumiting & Los Presinos,  
pairs <sup>in tall timber</sup> occurred, almost always  
except in dense pine cloud  
~~or mangrove forest.~~



Marshall (1942)

Mijiochanes cinereus

Lake Clomega Pairs common  
in arid woods of Colinas  
de Incuaran, noted especially  
in timber along ranches.

Behavior much like our pewees.  
Call remarkable for flycatcher:  
a rolling "preeet" exactly  
like the call of a canary.  
Like our pewee, it to call in  
am & east at night. Its

call at these times  
it gave a call similar  
to the yellow bill call of  
the W. wood pewee.

Very doubtful if

Clutata - Pairs common in  
balsam groves. Often confused  
with Empidonax as it when  
it perched at saddle <sup>heights</sup> parts  
of trees. Noticeably darker than  
any other Empidonax or  
Mijiochanes. Appeared much  
smaller than virens.





Marshall, (1942)

Empidonax flaviventris

Chilata Taken along streams  
in small trees below forest  
growth.



Marshall (1942)

*Empidonax traillii*

Lake Clowey Edge of lake, at  
our camp had a large  
flat marshy area with  
short - yellow like growth.  
This was quite common  
here and coll. 2~~7~~ there  
next to last morning there.  
Gave typical calls.  
V. de Santa Ana. In open forest  
IV base Arroyo de los Harejos  
where cleared for coffee planting.



Marshall (1942)

*Empidonax flavescens*

V. de Santa Ana common in cloud forest.

Occurrence same as at Los

Esmeriles - generally at high  
elev. and denser larger trees.



Marshall (1942)

*Onychorhynchus coronatus*

Lake Olonga 1<sup>st</sup> spec. perched  
in tree below dense tall  
trees at stream near spring.  
Looked like a *Myiarchus*.

2<sup>nd</sup> spec. Taken in shady  
gully under large trees up  
a ravine in *Cotinus deplanatus*.

Also was foraging in small  
growth 10-20 ft from ground.

Both in very well shaded  
localities. 2<sup>nd</sup> was  
only wounded when shot and  
it fanned out its crest  
& held it vertically when I  
picked it up. *Myiarchus*  
seen in most exposed leafless  
trees in open.





Marshall (1942)

Tolmomyia sulphurea

Lake Okechogee - Understory of  
swamp forest up to 50 +  
about 100 ft. Habits like

Euphonia

Chloris In balsams and  
lower parts of denser wetland  
forests.



Marshall (1942)

*Rhynchocyclus brevirostris*

Volcan de Santa Ana. Foraging,  
color appearance, habitat  
like *Empidonax difficilis*  
Both specimens taken same  
place, different ~~times~~ days  
(1 on way up mt., other  
on way back) from middle  
~~& upper~~ part, large trees  
in heavy dark forest on  
with slope Cerro de los  
Naranjos about  $\frac{1}{3}$  way up.  
Remarkable in that could  
probably ~~have~~ be same  
spot where van R took  
it.



Marshall, (1942)

Todirostrum lineatum

Lake Clowes - Seen along  
stream from camp to lake  
merging where it preferred  
interior parts of large dense green  
trees. Also in such trees (collected)  
along lake front. Taken in  
dry dense high brush across  
stream from camp.



Marshall, (1942)

*Cnecostoma cinereigulare*

Lake Olomega. In <sup>interior of</sup> low dense brush  
patches in swamp forest up slightly  
similar situation but more  
open forest where ~~Athalia~~ <sup>Athalia</sup> were  
taken on W end  
lake.

Chilata Brush in a <sup>haded</sup> ravine  
below balsams.





Marshall (1942)

Elaenia flavogaster

Lake Okomega On outside  
sm berry producing trees  
in openings at edge lake.  
Single .. Nest raised, form of  
actions similar to  
Phainopepla. Open country.



Marshall (1992)

Elania obscura

Vide ~~Santa Ana~~ Common in  
cloud forest, and not as much  
in open brush as at Los Escamotes.  
Was more towards summits  
of Jeco and Santa Ana and  
in trees.



Marshall (1942)

Elania viridicata

L. Olomega no notes or calls heard  
Chilata Open forest at W End.  
quiet, solitary, in humid  
forest "island" in shaded ravine  
where Turdus assimilis found.



Marshall (1942)

Tyranniscus vilissimus

Chilata

2472 skel collected am. one  
of a pair staying close together  
(same bush or sm tree) in  
the humid shaded gully  
where so many sp. made  
their only appearance at Chilata  
(ferns, springs, dense  
humid growth and under  
tall dense trees) Here were  
Turdus assimilis, Catharus  
aurantirostris, Ant-Wren, Y-gr Vireo,  
Blue Honey Creeper etc.

the pair pitched from <sup>sm tree</sup> bush to  
sm tree at edge of understory  
of forest with feeble flight  
like gnatcatchers. Stayed in  
outer foliage 10 ft up (but  
acted like vireos & looked  
remarkably like them) it moved  
around in foliage did not  
stay on a single perch looking  
for flying insects. There was  
nothing in my brief look into  
the behavior of this pair to  
suggest that they were flycatchers.  
2505 Taken at midday along creek  
on N side of range 1/2 mi before





Marshall (1942)

*Tyrannus vilissimus*

it leaves the mountains. Stream  
bottom 30 yds wide & flat. low  
trees or bushes at stream-side,  
well-lighted. A very open,  
sunny habitat. Saw a small  
bird perched on a horizontal  
twig 3' above stream as in  
this ill. :





Marshall, (1943)

Mionectes olearius

Chilata for habitat see  
Condor 45, 1943: 27 bottom.

This particular gorge is the  
biggest, deepest, and wildest  
in this whole part of the  
Balsam Range and is the  
only place where this sp.  
was found.

After reading Van's account  
of the colony of nesters in  
vine tangles <sup>draping the walls</sup>  
of a narrow ravine at Chilata  
I personally and "at great  
expenditure of effort" covered  
just about the entire length  
of four or five major creeks  
in our part of the range  
looking for vine draperies, nests,  
or the birds and found none.  
Perhaps Chilata is much  
~~drier~~ drier now than when  
Van was there because there  
was no luxuriant growth of  
vine anywhere that I could  
find. I soon found a  
probable nest probably of this  
sp. in the deepest gorge of the  
largest stream mentioned



Marshall (1992)

Mionectes leagnus

Chilata

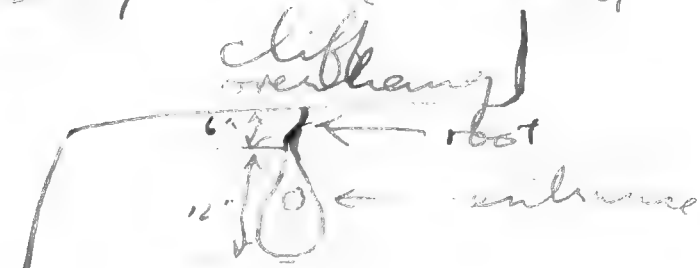
above. Gealey has a picture of the sight which is a great cavern or cavity in the side of the south wall of the gorge: really it is an overhang of 20-25 ft. There were ~~crevices~~ crevices here filled with droppings pellets feathers & and prey of Falco albicollis (the pair of falcons spent the day on the mt above the north wall where the swift foraged). From the middle of the ceiling hangs a short stout  $\frac{3}{8}$ " <sup>thick</sup> root from which was suspended the nest about as woven of tendrils, vines, grass etc. I discovered this nest about the 1st day at Chilata & observed it constantly in effort to find the birds but none was ever seen near it. It was the only clue I had to the presence of the sp. & served to increase my impatience & anxiety at finding none



Marshall (1992)

Micnectes deaguius

Chilata: Near the East day of  
stay, shot the nest down!



(only) got one glimpse of this  
sp in life. One morning when  
walking back from nest sight  
up gorge to camp (about  
300 yds up taken from above  
sight). Saw a little bird  
like a sm W. flycatcher flutter  
with nest material into a  
vertical fissure in the side of the  
gorge. In this crevice about  
6" wide at the back was  
a horiz. boulder with water  
drizzing around it into a  
pool a short dist. away.  
A partially built nest was  
suspended from some roots  
on the under side of this  
boulder making the bottom  
of the nest about 18" above  
ground. The bird flew directly  
to nest and hung onto a  
strand and flew backwards a



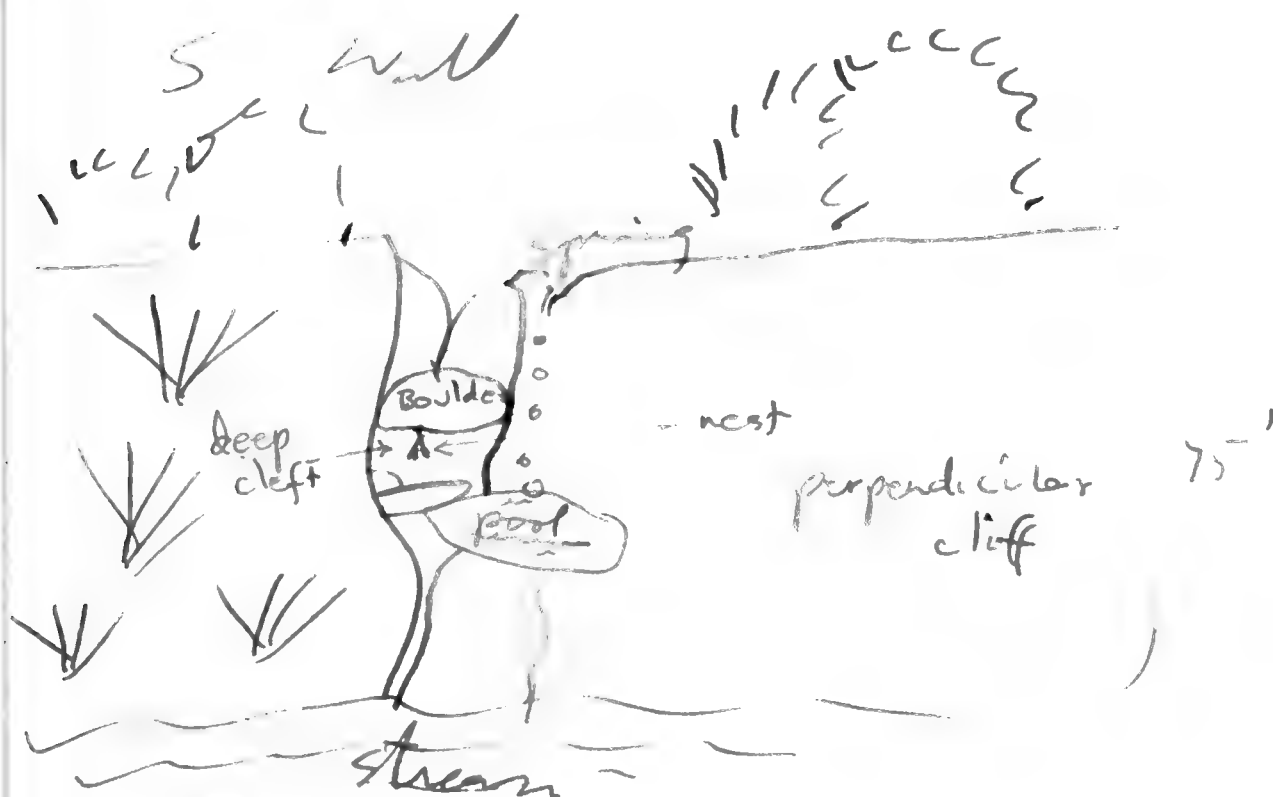


Marshall (1992)

Mionectes degenius

Chilata little half suspended  
by its bill, half-supported  
by its flight. Then darted  
out of the cleft and  
into some rank growth  
on the adjacent wall of the  
gorge. It darted from rock to  
bush & finally set down  
enough to be collected.  
No other bird seen at the  
nest nor anywhere else  
nor were any more nests  
seen.

with nests in overhangs  
on S Wall Canyon





Marshall (1942)

*Tridoprocne albilinea*

Lake Olomega:

15 Feb.

On my "birthday cruise" in a dugout, the sun day when we collected too much, Coll 4 swallows. They were available only over the water & I never saw a chance to get them over land.

Common around Lake Lake.  
Foraged 5-25 ft above water.  
Perched on stumps and branches of submerged trees.



Marshall (1942)

Stelgidopteryx ruficollis

L. Olmeyer : Noted Probably  
was over swamps and  
grass at sw corner lake  
Chilata Only in the same  
deep gorge with the Collared  
Swift. After discovering the  
swifts roosting crevice under  
a huge boulder over which  
the entire stream fell &  
went back in the daytime  
& noticed a r-w swallow  
clinging below a little hole  
on the lowest vertical  
face of the boulder and  
about 10 ft above the  
pool. This was a round hole  
about  $1\frac{1}{4}$ " diam in the solid  
rock & looked like a wood  
pecker hole in the rock! I never  
saw the swallows actually enter  
it. This pair of r-wings foraged  
almost exclusively in this gorge  
above the water itself (as usual)  
so was difficult to collect and  
have fall where I could reach  
them. I noted their preference  
to foraging in shadiest & deepest  
part of gorge, floating



Marshall (1942)

*Stelgidopteryx ruficollis*

Chilata locomotion (as described  
in Zool 113 notes) and (as in  
Warner Mts notes) their  
striking habits in foraging i.e.  
same circuit time after  
time & identical for both  
birds.





Marshall (1942)

Hirundo

April San Salvador noted in  
city.

V. de Santa Ana A couple  
seen over the summit of  
V. de Santa Ana. Were in  
straightaway flight to the  
north-west.



Marshall (1942)

*Fregata alicia*

San Miguel (Dec. 1941 Jan 1942) Common about

largest building, in town.  
V. de Santa Ana: About 10  
seen in loose flock over  
summit of V. de Santa Ana.

Did not return.

San Salvador: Abundant  
along streets and perched  
on roofs & inches of  
buildings. Focused over  
traffic from 20' to 75'  
roughly. Frequently perched.

Present at every stay in  
the city. At our last  
stay in May, the rainy  
season started and one  
evening at sun-set a  
cloud-burst occurred. The  
Martins all got under  
cover in recessed windows and under  
eaves and especially under the  
enlarged eaves over shop  
entrances. They crowded every  
available perch and sat  
side-by-side in rows within  
reach in the doorways. I  
could not determine where they went  
to roost after the rain when it was dark. Probably just  
roosted.



Marshall (1942)

*Cissilopta melanogaster*

V de Santa Ana. Didn't  
pay much attn to these  
jays but except in the  
dense timber near summit  
Cerro del Aguila where I  
was trying to get quail  
love that was looking  
(from same perch day after  
day). Every time I tried  
to stalk this dove on his  
high perch one member  
of this flock of about 12  
jays would always screech  
an alarm note and the  
dove would shut up. When  
the damn thing did hoot  
I wasn't much better off  
because owing to its  
ventriloquial quality I could  
never get an exact enough  
direction. The jay  
episode happened regularly.  
One of this particular  
flock was taken. They hung  
around edge between dense forest  
and cleared field and made  
trouble for me generally.



Marshall (1992)

Calocitta formosa

Lake Olomega: Very open mixed growth with occasional large tree at SW corner lake.

Flew with straight ~~look~~ slow flight with regular slow wing beats, generally from one large tree to another.

Seldom seen in little growth.

Great variety of sounds.

W. de Santa Ana - mixed near.

Chilata

Noted -





Marshall (1942)

Thryothorus rufellus

V. de Santa Ana:

Cerro del Aguila: conspicuous (by song) in densest brush patches under the largest and densest trees i.e. brush under mature forest. Paired. M's singing, pairs close together. Never more than a few ft off ground. Shared this habitat with Catherpes aurantirostris and I. maculipennis. Call (song) easily imitated, yet M's seldom paid attention - or would come str. to edge of brush, take a look, & disappear again before I could shoot. Then keep on singing in co. with ♀ out of sight. Song quality & pitch of (A. Squeal) but at close range has some higher notes: ends with a definite liquid sound "whit". Each song is very song & has a few hoots on one pitch, the rest  $\frac{1}{2}$  & lower. A given pair progresses slowly through quite a large area of brush.

Cerro de los Mucos, 2297, 2298, 2299  
coll at dusk <sup>within</sup> at edge forest on



Marshall, (1942)

Chrythous rufellus

V. de Santalima N. base hill  
where dense brush under  
large trees. Apparently 2  
pairs in one bush pile &  
they all turned out when  
I gave screw-out notes &  
clamored around me uttering  
harsh alarm notes. Coll.  
at close range with #22 shot.  
M's noticeably bigger than F's.

Chilata recorded in my copy  
of Van R. Probably heard it  
in one of deeper hidden  
canyons



Marshall (1942)

Thryothorus plumostictus

Chilata Only in that deepest  
gorge where everything else  
of importance at Chilata  
was found. One pair  
building a nest in short  
tree in bottom of gorge, at least  
2 males heard on N slope  
where dense thickets and  
larger trees were plentiful.  
stands out as first seen  
song in whole show - as I  
recall, a sustained varied  
song but don't recall exactly.  
If this is true would be  
an exception along with T. aequalis  
to usual pattern of double  
phrases characterizing T. modestus,  
T. m. and Henicorhina.

1st spec. taken at very long  
range as sang from rocks in  
steep shady ravine on the N slope.  
I had to chase it for a long  
way up this hill apparently  
was up in trees much of time  
always singing superbly. Later  
another ♂ heard here.

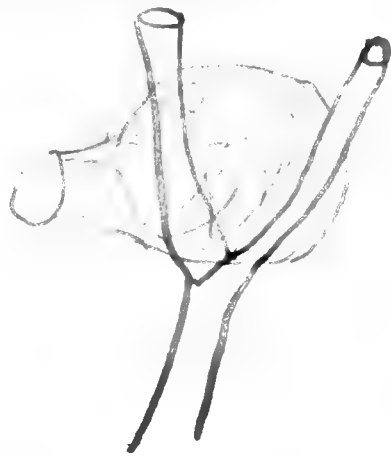
2566 & 2567 were taken as they  
built a nest in bottom of



Marshall (1942)

Thryothorus pleurostictus

Chilata, gorge in fork of  
prickly large-leaved tree about  
6 ft up & absolutely in  
open. Narrow neck, walls  
so thin could see right  
through. Tree right in open.  
Nest preserved by squashing  
flat.



This nest was very new, had  
no egg shells in bottom, not even  
a thickening in bottom, the  
sides certainly appeared to  
be working on it & it  
was in the bottom of a rock chasm where  
~~the~~ <sup>the</sup> ~~nest~~ <sup>nest</sup> was never seen nor  
expected, not pendant, ∴ I  
say the birds built it  
themselves. Were very tame,  
nest right in open, went to  
it freely. - After (♂)<sup>1st</sup> collected, ♀  
became very shy & was almost  
impossible to locate in the rocks  
& sparse growth





Marshall (1942)

Thryothorus maculipectus

V. de Santa Lisa Heard often but only one seen & coll. in dense brush under heavy forest trees (fig) on Cerro del Aguila. This one squeaked up to brush at edge of road. A very loud and excellent song which came often from this bushy home of the rufellus & C. curvirostris & I thought for a long time to be the latter.  
Chilata Heard??



Marshall (1982)

*Heleodytes rufinucha*

Goterra: Dec '41 Also in trees & bushes along road - around trunks & larger limbs.

Very noisy & much unusual posturing with head & bill pointed upward, tail spreading, wing flicking etc. whenever 2 together. ~~from~~

Olomega: Abundant around farms & along roads where favored large dense trees, climbing around on bark like mitreches. Also headquarters in these large trees, foraged near ground in other bushes & trees.

Occurred generally in most open flat country wherever a few good-sized trees or where houses, fence rows & trees, roadside rows of trees.

Its posturing became very familiar and loud



accompanying squawks when ever 2 birds together.

V. de Santa Ana 1 pr. at our house 5000 ft.

Chilata Common esp. farms.



Marshall (1942)

Turdus rufitorques

Colonizing only diff. front. mgs.

V. de Santa Ana

2276 taken at ~~extreme~~  
summit of cleared thumps of  
"Jeco" back of camp. This  
summit had one tall  
snag left, ground covered  
with dense brush. Robin  
came from overhead, alighted  
~~to~~ on top of snag gave a  
lot of loud alarm notes  
& began to sing. Coll. all  
alone.

2390, 2391 from breeding colony at  
summit of Santa Ana. ~~in~~  
As dens. in Van Rossem - a pair  
with a few trees - foraged on  
grd in grass & sang from  
trees - and from trees in  
heavy brush on the outermost  
wall of crater. Very definitely  
a colony - close packed in  
sm. area perhaps several hundred  
birds - extreme unit noise,  
fighting, singing etc. Old ♂ is  
very tough to get. Very wild.  
Great nois. after some kind of berry  
in the brush patch. Cedar Waxwings  
& many other birds in the brush.



Marshall (1942)

Lurdus rufitorques

V. de Santa Ana : Behavior, notes, song, feeding, all identical to T. migratorius. The main difference was the fact that the birds occurred in what seemed to be a breeding colony. They were actually breeding and the pairs were crowded much closer together than you would ever find T. migratorius, could hardly be even territories here. Were they together and limited to this one spot because of peculiarity of habitat - requirements satisfied there only, or because really a local and colonizing bird?

Evidence from Los Esmeraldas indicates (occurrence only in one colony there where orchard trees & bare ground or short grass - not unique habitat) <sup>but recent and man-made!</sup> colony. At Santa Ana, any other suitable habitat would also be around <sup>human</sup> habitations & clearings & would be recent & not stable ∴ could be limited to summit by necessity, not <sup>be</sup> scattered colonial instinct. Small <sup>scattered</sup> trees - bare ground. ??





Marshall (1942)

Turdus assimilis

V. de Santa Ana :

Cerro del Aguila -

See Fig 12

Condor 45, 1944:32

Canyon between the  
2 peaks of had very large fig  
& other oak trees <sup>all</sup> on  
left-hand (w) side <sup>large tract of</sup> underbrush  
cleared - near bottom preparatory  
to coffee planting. This left  
a <sup>holo</sup> hillside of big trees  
& bare ground underneath. ~~except~~ This  
was where T. assimilis, Trogons,  
Attilas, ~~various~~ Piranga leucostera  
etc. hung out  
in the tops eating berries &  
fruit. Definitely a restricted  
colony of T. assimilis. Almost  
never seen, stayed in  
densest high foliage for feeding  
& singing. Cloudy dark  
days sang from lower large  
branches 60' up! in view but  
never moved so couldn't  
find them then either. Very  
peculiar frog-like call: kerr-r-r-r  
reminiscent one of Scotus. Judging  
from these calls, were lot of  
birds in every tree but when  
I tried to talk them



Marshall (1942)

Turdus assimilis

They would leak out the backs  
of the trees unseen & soon  
be heard farther uphill.

The song is the best robin song  
of all. It includes phrases from  
the best migratorius songs, plus  
mellow whistles and other  
phrases of the mockingbird  
type - but uttered in separate  
phrases like regular robin <sup>Ther.</sup> song.

Remarkably powerful song - none  
of the notes are muffed as  
in T. migratorius, each of  
great beauty and of deliberate  
tempo. A scale of Turdus  
songs might be erected thus:

T. plebejus humming, like English Sparrow <sup>with some same</sup> monotonous <sup>hummed</sup>

T. migratorius & T. rubitorques <sup>a little</sup> less hurried,  
more time between phrases, <sup>more musical</sup> and less monotonous, not full tone <sup>and loud</sup>

T. grayi: takes its time, variety, beauty, good  
full tone. Strictly a T. migr. type though <sup>trickling bird</sup> not <sup>so</sup> stuffy.

T. assimilis Deliberate, full, great variety  
but still recognizable as debet. from even phrases of migr. song.

T. infuscatus No semblance of

T. migr. song, no adherence to  
tracing of phrases, pattern like a  
mockingbird but much better quality  
and good, mellow whistled phrases.

like English Sparrow, least variety  
most variety like warblers



Marshall (1992)

Turdus assimilis

Cerro de Aguila contin. . . #2325 taken  
from this "colony" - large trees,  
open or bare and free from undergrowth,  
this, of course artificial here  
man-made. Never seen on  
ground. Closest to ground was  
on foggy evening when singing  
from bare limb (perched along side  
it ~~at~~) about 40 ft above

road. Heard daily at this locality.  
April 16 Laguna de las Ranas (V de Santa Ana):

2366 & 2367 Taken in extremely  
tall, park-like forest on S side  
lake bed, fairly level ground.

A north-facing slope altho  
hardly any rise to rim  
bordering lake - perhaps 50'.  
On this side the trees were  
very tall and immense, widely  
spaced, yet interlocking above  
to produce heavy shade below.  
Ground absolutely open & bare  
of brush, only mosses, ferns,  
and occasional small, symmetrical  
shrubs. Crown foliage 100 or  
more ft up - a magnificent  
grove & T. assimilis only here.



Marshall (1942)

Turdus assimilis

Laguna de las Panas: Elsewhere in the area of the lake were steeper slopes & dense underbrush under the forest or at one east-facing hillside the trees were low (25-30') & no undergrowth, only leaves. Still not the same as above habitat. Again, this could be a colony, actually was in a sense because many individuals here in a ~~the~~ limited area, or a restriction to particular very local habitat. Birds almost impossible to see, harsh calls & occasional singing (midday) from high in foliage. Could see only after alighting, from flight - generally ran along boughs and perched lengthwise of them, thereby keeping generally out of sight. Calls and actions remarkably like *Sporus*. One ♂ could get singing several times by imitating call and song - but would never come close enough for shot. Very few seen & 2 shot at extreme range. *T. infuscatus* here in same trees.





Marshall (1942)

Turdus assimilis

V. de Santa Ana: In course of  
day of trip to summit, found  
another "colony" & coll. 2375.  
Detected by Hyla-like calls in  
dense vegetation along steep narrow  
ravine with creek in it. Many  
birds here & could see them often  
by looking into the thickets.  
Would come close to initiate  
notes. Sides of ravine had rather  
dense tree growth, a few  
yards away was clearing.

May 2 Chilata: 2417 Taken from another  
"colony" - only birds located or  
heard in entire Chilata area. Were  
in edge of a balsam grove and  
in adjoining ~~low~~ <sup>humid</sup> ravine where  
there was a unique luxuriant  
growth. The steep hill from  
ravine to balsam grove had  
bare ground & tall snags &  
foliated trees. The Robins were  
singing from the latter snags  
& trees. The birds were very noisy  
& conspicuous, singing from bare  
branches in the snag & flying  
back & forth to the same.



Marshall (1911).

Turdus grayi

T. Olomega Not uniformly distributed.

A loose flock 50+. Stayed in lower farmyard, along the creek there and fed on fruit in the adjacent dense trees. Towards end of our stay would sometimes hear an <sup>evening</sup> chorus of faint songs.

Rather noisy birds. Called with all call-notes same as T. migratorius.

Didn't forage on ground. Sometimes bathing or drinking from rocks or edge creek. Kept in upper foliage of trees at edge forest or along creek or isolated trees. Fruit-eating in company with several kinds of orioles and a multitude of Hylocichla ustulata.

San Ignacio Apr 6 Noted in Pines.

V. de Santa Ana <sup>April</sup> Common in planted coffee finca, especially around our camp. This finca had well-grown very large trees for shade; the robins sang & called from them.

2393, 2394 taken later in April when in full song, but not yet paired, still in loose flocks. On this day, was a rain and the robins came to the pools along in the road to drink and bathe



Marshall (1942)

Turdus grayi

Y. de Santa Ana

up to a dozen at a time. Much more noisy this time of year; very inconspicuous in winter at Clomega & Cacaguatque. Fond calls and much community singing. Song loud, clear, of same structure as *T. migratorius* but with fuller tone, more varied phrases much superior in every respect. No whistles or mockingbird-like notes as in *assimilis* & *infuscatas*, however.

Cond: Occurred in great numbers, semi-flocks, everywhere except on Esmeraldas. Abounds particularly around settled areas, and since most of the country is settled, this is of importance. Not in densest cloud forest on Cerro de los Naranjos, Cerro del Aguila, Santa Ana.



Marshall (1942)

Turdus infuscatus

~~Apr~~ Volcan de Santa Ana (Laguna de las Kanas)

Apr. 16 On Apr. 16, day of trip to the dry lake to the n-w, this sp. was encountered in the tail-pink-like forest along with assimilis described under T. assimilis. Also stayed very high up in the foliage and distant coos. Some singing in midday. \*\* heard ~~seen~~ generally in denser cloud forests on Santa Ana, C. del Azteca.





Marshall (1942)

Catharus occidentalis

Volcan de Santa Ana North slope  
near summit in tract of  
rich heavy cloud forest  
with great variety of undercovers.  
Late in afternoon as passed  
this grove (returning from  
summit) heard several  
Catharus singing. Apparently  
quite half a dozen pairs  
breeding in this favorable  
habitat. Another example  
of a species common on  
Los Esmeriles, extremely local  
at this area.



Marshall (1982)

Catharus aurantirostris

V. de Santa Cruz: One of the commonest and least conspicuous species in the area. 1st sp.

Taken on top Icco in a ravine choked with sm cypress trees & vines. I thought I was trailing a Mountain Chickadee from the song which was similar to the chickadee

3 note song except very faint and hisped. Of the hundreds heard subsequently, there were rendered every combination of 3 or 4 weak hisped notes & little twangs or thrush-like vibrations in between but never anything better than this squeaky faint performance.

The birds ~~do~~ do a great deal of singing all day long but the song can't be heard for more than 50 yds. Van R. and it confused with Myiobuteo bottom pg 454. Birds joined generally.

Can tell sexes in field. Found them in great variety of habitats but always in dense brush and vine tangles and usually in open. However in the spacious park-like forest on Cerro Aguirre they were abundant in



Marshall (1942)

Catharus umanturostris

V. de Santa Ana: the luxuriant  
tall dense undergrowth alone  
with Thryothorus rufalbus and  
maculipictus. The most typical  
habitat was that described under  
Empidonax albigularis <sup>& Sporophila moreletii</sup> - along  
brushy gulleys running thru  
cultivated areas. (The brush  
grows in and at the sides of  
these gulleys because nothing  
is planted there.) These brushy  
areas are absolutely open - no  
trees. But Catharus stays  
under cover very well, forages  
& ~~hops~~ <sup>hops</sup> Hylocichla & can  
be heard rustling the leaves.  
Singing usually not from a special  
perch but from ground and  
interior of brush - sings as  
forages H. guttata therefore  
song always from different  
spot. Top of page is only instance  
where in brush under real  
forest cover because the trees were  
very high & widely-spaced.  
On cloudy or rainy days  
wandered away from brush -  
on C. del Aguila a pair worked



Marshall (1942)

Catherus aurantirostris

V. de Santa Ana

far out into the Castor Bean  
plantation but always within  
range of cypress hedges where  
they would go when startled.  
In this Castor Bean area, ground  
is almost bare. This pair  
ran about on it like robins  
but always kept a hedge  
or tree or boulder between  
themselves and me.

Only

May 2 Chilata

Only one place in entire  
area - i.e. the humid shaded  
valley with the spring, ferns,  
luxuriant growth where  
L. assimilis was. Several  
males singing in denser  
wetter part of the valley.  
In brush.





Marshall (1992)

Hylocichla ustulata

Lake Olancho (ustulata) Abundant locally  
locally: as in fruit-bearing trees  
toward lake from camp at edge  
forest where foraged in crown  
foliage. (eating berries) with  
orioles and T. grayi. There  
was a ~~spa~~ trailside enclosure  
of trees at edge forest near  
camp formed by a circle  
of 30-40 trees meeting overhead.  
Every am would be 10-15 birds  
up to 25 T. grayi & about as  
many H. ustulata in crown  
foliage. Never on ground.

Usually silent. ~~So~~ When called,  
used only the "low" "choit" note.

~~Not in the~~ (almae)

Volcan de Santa Ana, Most abundant  
birds in thickest under forest cover  
everywhere. Greatest numbers  
occurred in the habitat of  
Thryothorus maculipictus descr. above.  
Here they were encountered in abundance  
everyday & there was much calling  
and singing - almost full song in  
loudness. Noted & shot Laguna de  
las Ranas, many at summit Santa  
Ana in berry prod. brush. Chalchicomula common here.



Marshall (1942)

Myadestes obscurus

Vde Santa Ana <sup>in trees</sup> noted in  
abundance <sup>in</sup> on Cerro del Cigalia  
where under brush cut and  
all along the road. 1 nest  
found in road bank near  
saddle. Birds very tame,  
easy to approach and in green  
woods where easy to see.  
Sing from middle heights of  
large trees which means the  
lowest branches 60 or so ft up.  
Sit on little horizontal twigs  
very motionless. Sing just about  
all day. Behavior much different  
from Los Esmeraldas where only  
in densest low trees.

Caney Mt. Refuge, Ozark Co., Mo.

May 14, 1944

♂ testis 3.5 mm.

Marshall, (1942)

Antinus rubescens

Apr. 16 Vde Santa Ana - Only one single  
bird on the dry lake bed  
Laguna de las Ranas - cracked  
mud & considerable ~~rust~~ grass.  
Should flush from edge tall  
grass patches at  $\pm$  distance.  
It was finally shot <sup>on the way</sup>  
near road. Lake bed  
about 300 yds across. Afternoon.



Marshall (1942)

Polignatus

Lake Olonega always paired.

In tall high grass and scrubby  
mimosa or short 2nd growth?

is the most open conditions not  
actually meadow or marsh.

Requires low scrubby trees.

Therefore extant only in wetlands  
w camp around to pond lake.

Carinata Common paired in  
2nd growth low scrubby timber  
on hot ridges.





Marshall (1942)

Ramphocaenus rufigularis

Lake Olonega Open forest of large widely-spaced trees at W end Lake on flat bare ground with occasional dense patches of brush 6' high. In these, Encostoma and Ramphocaenus, above them, Colaptes, and in similar patches but not in the open not shaded by forest trees was S. gularis. 2 ♂♂ heard singing in this brush - song I can describe only as a "drillble" like blowing tiny bubbles rapidly out of a pipe. Very fine delicate, high, yet sweet, a descending cascade. A descending trill. The bird was seen on far side of brush patch as it hopped around in twigs within 6" of ground & shot.

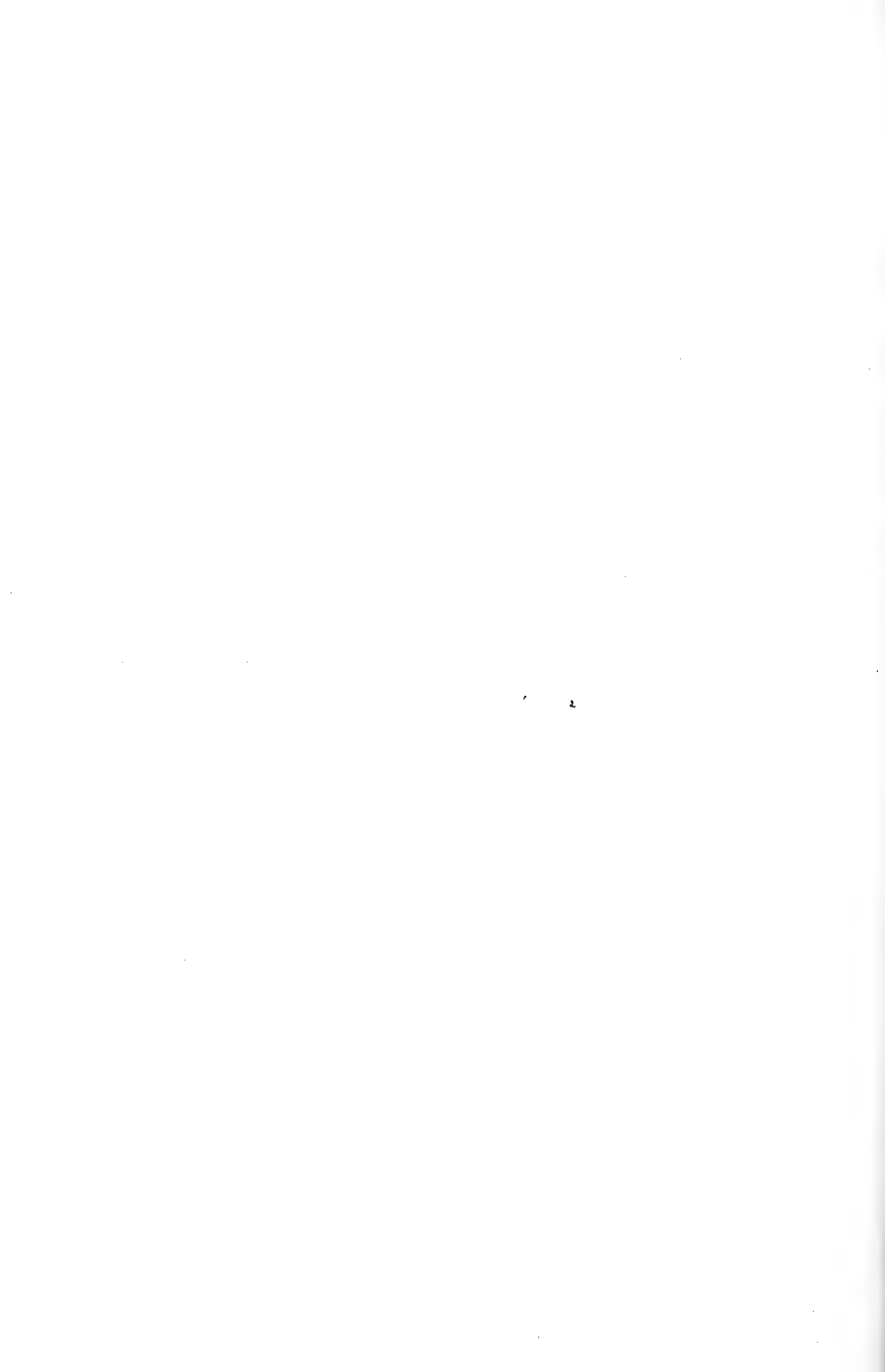
Chulata Humid glade where Tyrannus, Turdus assimilis and Catharus found. Was in darker deeper part of ravine foraging in shaded sparse brush under trees hopping around in twigs picking off insects? Looked just like Wilson's Tit in life at (over)

that distance which is  
surprising when its far  
different proportions were  
noticed upon collecting.  
was paying up to 6'  $\frac{1}{2}$  in bush

Marshall (1942)

Doubyella centralis

I. de Santa Ana Several feeding  
in high dense brush at  
N edge rim where there  
were many berries and many  
birds gathered to feed upon them.



Marshall, (1942)

Cyclarhis flaviventris

Lake Olomega Coincident with  
Ant-shrike - i.e. in dense "Elfin  
forest" E camp. So common not  
much noticed.

V. de Santa Ana in tall bushy patches  
where grown after logging on  
s-facing slopes and brushy  
gulleys in same terr. with  
Ant-shrike and Tyrera and  
other definitely low-zone  
birds in this non-original  
habitat.

Chikata in high brush or  
low trees.



Marshall (1992)

Vireo flavifrons

Lake Olomega / coll.

Vde Santa Ana / coll. in new  
coffee-grove (recently cleared of  
underbrush) at N base  
Cerro de los Naranjos.





Marshall (1942)

Vireo solitarius

Vde Santa Ana Probably on  
base Cerro de Los Naranjos where  
all the vireos were migrating.  
Chilata at least two singing  
males established on permanent  
territories in balsams at  
edge groves & next to  
main river gorge. Heard  
daily and never collected.  
Very high in top foliage  
& always missed. Some  
~~characteristic~~ distinctive, however.



Marshall (1942)

Vireo olivaceus flavoviridis

Chilata The most abundant, noisiest, most conspicuous birds at Chilata esp. around plantations in growth along streams woodland and everywhere where green ~~veget~~ trees medium-sized or small occurred.

Everywhere but along rocky gorge and in hot open fields. A great variety of notes, songs, scolding, and chattering, sounded much like English Sparrows.

All calls very loud. Always much fighting. Generally 2 or 3 birds in some tree foraging lazily and calling.

fighting and <sup>posturing</sup> squalling, very noisily. Stay in green foliage where heard at time of writing (June 1944)

having become familiar with the quiet, receding olivaceus, I can see gt. diff. in notes & behavior. Song and notes louder and more varied in flavoviridis.



Marshall (1992)

Vireo gilvus

V. de Santa Ana - In deep woods  
on gentle slope N base Cerro del  
Aguila where undergrowth cleared  
for coffee planting & sunlight  
occurs on ground in large patches,  
~~at~~ were a great many migrants,  
esp. vireos. Gilvus there  
every time I passed the area,  
not always singing but could  
always turn up some by  
waiting long enough. sometimes  
full song, sometimes scratchy  
whisper song; perched high  
above ground in crowns of green  
trees. Often 2 in a tree & inner.  
singing.



Marshall (1942)

Hylodulius decurtatus

Feb. Lake Olonega Found only in  
dense high crowns of large trees  
at lake edge of swamp forest  
and in small trees in  
mixed swamp forest further  
away from lake where Piculus  
Vermilionis found. 1<sup>st</sup> area  
in crowns foliage with Tennessee  
W and Bl & White Warblers, etc., <sup>Cyanerpes</sup>  
2<sup>nd</sup> place a breeding pair in dense  
vines on tree 10 ft from ground  
in mixed large & sun-tree growth,  
but still definitely swamp forest.  
Anxious about a nest & came  
very close.





Marshall (1942)

Cyanerpes cyaneus

Lake Olomega - 2 birds seen in top  
~~running~~ bare tree along road w/ camp  
(road thru fields) perched like  
siskins a few inches apart.  
Coll both, a ♂ im & ♀ both in green  
plumage, #1918 & 1919. #2016 shot  
from crown foliage of tree ~~for~~  
edge swamp forest w/ edge lake  
foraging with Warblers, Hyllophilus,  
etc. Not more of flock of Cyanerpes.

Chalata Abundant very active and  
~~noisy~~ noisy in ~~low~~ ~~low~~ humid ~~water~~  
ravine where Turdus assimilis  
& Catharus found. foraging high  
in crowns of tall trees or in  
bushes near yard.



Marshall (1942)

Drylosa barbitula

V. de Santa Ana. Common often  
met with heard, squeaked  
out of dense brush at foot  
large trees edge cloud forest  
on jeco, C. del Cuyula, etc.  
More noticed than at Los Cresmiles.



Marshall (1942)

Mniotilta varia

Lake Okechogone mixed swamp forest - crown foliage with flocks.

V. de Santa Ana abundant esp.

in Cypresses planted throughout  
coffee fincas. kept to trunks  
& branches.

~~Vermivora peregrina~~

Vermivora peregrina

V. de Santa Ana ~~Hummer~~ in  
~~roving~~ flocks Several seen and  
one collected in dense deep  
brush on rim Volcano at  
summit where feeding with  
gt. variety of birds, mapwings,  
robins, etc.



Marshall (1942)

Vermivora superciliosa

V de Santa Cruz Much more  
numerous than at Los Escamiles.  
Almost every large tree had  
a singing ♂. In pairs the rule,  
sometimes several in one tree.  
Easily attracted by scratches &  
loud calls, tame. Sang from  
low trees or epiphytes as  
well as high in trees. Only  
in heavy timber.





Marshall (1942)

Dendroica aestiva

L. Olomega Several collected from trees around mouth of stream thru camp at lake margin where grass marsh with <sup>isolated</sup> clumps of large trees, & willow growth. A common species around edge lake.

Vde Santa Ana Several in trees around camp where same song just day or several days in row. #2466 taken in cypress hedge where had been singing for several days (or a different bird each day singing from same round of perches?)

Chilata #2487 taken.

Dendroica - magnolia

L. Olomega - Almost always noted in sparse tall <sup>brush</sup> understory of swamp forest w end have generally joined.

Vde Santa Ana #2396 Summit? Noted often in coffee bushes in shaded parts of plantation - singing.

Chilata Noted.

Dendroica virens

Vde Santa Ana common in large trees



Marshall (1942)

Seiurus aurocapillus  
Vermivora peregrina

Vde Santa Ana Numerous in  
roving flocks of migrant  
warblers & vireos in crown  
foliage of larger trees.

L. Olomega Seen once or twice in  
patches of clear ground covered  
with leaves in dense growth  
edge Lake NE camp - walking  
on ground.

Vde Santa Ana 1 coll #2314.

1 shot in cypress grove on way to L. de Las Ranas  
Apr. 16 alarm note.

Cporornis tolmiei

Noted at Chilata & Vde Santa Ana.

See also <sup>note for</sup> Cacagnotque and Los Esosmiles

G. Alhyps trichas

L. Olomega abundant in cattails  
or tall grass & willow thickets  
edge lake where no trees &  
over water.

V. de Santa Ana #2937 One coll. <sup>undoubtedly</sup>  
of crushy gully with Calceas &  
E. albogularis.



Marshall (1942)

Chamaethlypis poliocephala

Lake Omeiga # 1913 coll as sang  
from top clump of grass &  
from a vine-entangled sm. tree  
at edge grassland. Pleasing song.

Valle Santa Ana # 2304 & 2305 coll  
together as they foraged in chaparral  
grown into old clearing on E  
base Cerro de los Muertos. They  
looked & acted just like Tolmie W. to  
my opinion, tail much longer &  
held up at angle, however. This  
was edge of chaparral area - this  
brush followed course of little  
creeks and valleys across cleared  
cornfields & along these struggling  
lines of brush this sp. was abundant  
and everywhere heard or seen. Paired.

Other gulls mentioned under Citharus,  
G. thlypis, & E. albicollis were there  
coffee or plantings of Castor trees.

The present sp. not there - only  
next to corn fields, often singing & abundant  
in cypress hedges next to fields - heard  
out in fields but always fly to edge  
when approach. Call note very slight chirp  
but haunting & very distinctive  
reminds of calls of other open field birds, swallows,  
sparrows, horned larks, etc. Heard from fields on <sup>mountain</sup> <sup>at night</sup>.



Marshall (1942)

Istia virens

L. Olmeca coll #1587 willow<sup>d</sup> shore.

Wilsonia pusilla

L. Olmeca - common in shaded areas among dense tree growth, edge lake, etc.

Yde Santa Lisa - Abundant in the dense humid brush growth under the large cloud forest trees on Cerro del Uquile where Urothorus maenijactus lived and where tree quail frequented.

Setophaga ruticilla

L. Olmeca - common along str. from camp and elsewhere. Seen bathing in creek. In shaded brush & trees.





Marshall, (1942)

Nyctoborus minimatus

Yde Santa Ana I thought this  
of more common here than at  
Los Eses. Many turned up  
on way up N slope volcano  
in places where bare ground &  
under park-like groves. These birds  
in vines & low branches at  
edge these openings. Not seen  
in other coll. areas, however.

Euthlypis lachrymosa

Lake Olomega - This sp. has the  
most striking and beautiful song  
that I have heard from a warbler,  
loud. ~~Only~~ Only along rocks  
of beds of dry washes in  
actual foothills where dry  
leafless vines & root tangles,  
scrubby forest cover. Forages in these  
rocks fanning tail. Seen only  
at distance. Not in places  
where creek bed clear of bordering  
growth under huge trees in steep  
walled ravines. Individual widely  
separated along rock course ~~also~~ a  
parody on dist. of the ouzel.



Marshall (1992).

Basileuterus delatini

Lake Okomega - 1800, 1801 taken in  
clump brush over pool edge lake  
NE camp where dense <sup>often noted in shaded</sup> forest goes clear to lake. Very tame.

Apr 6 W slope Los Exomiles 2261 shot in  
tall growth brush at trail side  
on W slope. Cover where  
geococcyx, Melospiza, etc also found.  
Volcans de Santa Ana 2412 + 2413 taken  
in brush patches under tree growth  
in flat land forest NE Base  
Cerro de los Navajos on same  
ground with B. culicivorus.  
Paired, ♂'s singing. Also in  
coffee bushes back of camp when  
shaded by cypress etc.  
Chilata noted.

Basileuterus culicivorus

V de Santa Ana Paired males singing  
in brush patches under forest cover  
NE base Cerro de los Navajos - very  
common ~~seen~~ close together. Also in shaded  
coffee bushes.



Marshall (1942)

Agelaius phoeniceus

Lake Olomega 1805 shot in tall grass  
edge lake - one of a flock of  
500-1000 seen every <sup>morning</sup> ~~night~~ <sup>late</sup> ~~going~~ <sup>left</sup> to  
roost in huge dead leafless  
tree edge line in ~~open~~ <sup>open</sup> treeless  
area. Heard for miles (clamor  
or calling) 1925 all alone  
when shot in dry grass several hundred  
yards from lake.

Icterus pectoralis, sclateri, gularis

Lake Olomega Common and  
conspicuous in trees around farm-  
yard ~~at~~ creek where berry trees  
feeding with R-b Thrushes & Robins.  
pectoralis least common. Pectoralis  
found down trail thru dense scrub  
forest E Camp.

Orioles abundant  
throughout  
finches on  
Santa Ana

de Santa Ana pectoralis + sclateri found  
in hedges & trees planted around  
fields or coffee groves. Sclateri: nest in dead  
snag 75' above ground  
absolutely in open.

Chilata Pectoralis & sclateri found  
along open streamcourses, nesting  
near or along canyon walls. Common  
in openings where no dense cover.  
These three orioles had clear, distinctive  
notes but I never took time to separate  
them.



Marshall (1942)

Icterus maculi-alatus

Vde Santa Ana. ♂ 2410 - not  
as sang from bare stub tall  
tree in heavy forest on flat  
ground NE base Cerro de los Nuevos  
Very shy - long time following &  
stalking. Singing from tops trees.  
A slender, graceful shy bird. ~~Was in~~  
most exquisitely fresh plumage (skel)  
This first actually rather open - large  
& small trees - ~~pos~~ but foliage  
dense. Was the area where migrating  
warblers & vireos found, also  
all the Basileuterus. An oak  
association looking just like  
live oaks in Pasadena.

2441 & 2442 a pair in im plumage  
described in catalog were shot  
together in cypress (10') hedge  
separating tracts of castor bean trees.  
Shot "routinely" with other orioles  
& until compared with Van's skins  
thought to be new sp. for El Salvador.  
There were many immature orioles  
wandering about these orchard.

Icterus spurius

Lake Olomega An abundant bird in sw lake  
where sparse mimosa in blossom in flat grass  
area. Feeding here with hundreds of hummingbird.  
50 or more individ in ~~sees~~ about 15 acres.





Marshall (1942)

Icterus galbula

Lake Otonaga / shot in <sup>mixed</sup> woods  
SW end lake from high tree & given  
to Hildebrand who prepared a skull of it.

Amblycercus holosericeus

Lake Otonaga Found in limited numbers  
only at W edge of lake before coming  
to swamp forest on flat dry area  
of clear ground scrubby low trees,  
clumps of bushes, winding  
sloughs. These birds taken in  
brush patches under the sparse  
higher trees along the slough.

Cassidix mexicanus

Lake Otonaga Seen only at the  
town of Tierra Blanca  
where much civilization for this  
bird. None around farms  
where we stayed except I  
saw one fly high over head  
toward Tierra Blanca one day.



Marshall (1942)

Cassidix mexicanus

V. de Santa Ana - Abundant throughout farms and fincas nowhere far from habitation however. I especially recall the adaptability of this bird as I watched hundreds of them (throughout a large area of fincas) feeding in the air about 30' above trees, zig-zagging around and catching locust which were for about a week very abundant. Made very fine eating.

Very noisy.

Chilata Common around habitation, nesting in tall palms.

Tangavins aeneus

V. de Santa Ana - Found at Laguna de las Ranas (cattle there) <sup>(herd)</sup> 2373 I believe. A large flock of 100± in open plowed flat area E base Cerro de los Marañones very hard to sneak up on. Feed close together.

Chilata noted. Open areas agric.  
San Salvador Common around effluent station.



Marshall (1942)

Chlorophonia occipitalis

(Heard by MH at Los Esesmites)

V de Santa Ana Common in the heaviest, densest, greenest forest trees on the North slope of Cmo de los Naranjos where feeding in high or medium high foliage but could get close to them on steep hills. In groups of 3 or more per tree. Call remindful of Sayornis saya a plaintive long pure whistle but in this species is lower & fuller & rounder tone. But very pathetic and slightly inflected down. Feed among <sup>light</sup> green branches & foliage & blend very well. Hildebrand camped out on Los Esesmites & heard these calls, probably in early am or evening. I don't recall having heard them although I was there for the "dawn chorus" of Brown Robins.



Marshall (1942)

Tanagra lanta

Chilata ~~Call~~ similar to Western  
~~Wood Pewee~~ but call a high whistle  
like canary downward inflected  $\sim$   
but not rough like W. wood pewee.  
Found only in trees on wall of  
deep rocky gorge where collared  
swifts found. Same place 2 different  
days got one each time. Only  
2 or 3 birds seen. Looked and acted  
like green-backed goldfinch.

I think I found them when  
they were coming down to stream to  
drink. Saw at very close range.

Tanagra affinis

Lake Olmeca Common, paired in larger dense  
trees along road thru fields W camp. All  
within 300 yds camp. after that trees small &  
scraggly. Were 6 $\pm$  pairs. It was several  
weeks before I shot one and was surprised  
to find it wasn't a Green-backed Goldfinch.

High ~~Mountain~~ <sup>tree</sup> Calls, size, pattern, color, shape all identical in  
field views. Usually in highest parts of  
tree but once or twice a few ft. from ground  
on fence and adjacent mesquite beneath  
the tree.

Chilata Pairs <sup>rarely</sup> occasionally heard or seen. In shot  
on road inland side of range. <sup>pr. on hill across</sup> canyon from camp. J#2511





Marshall (1942)

Thraupis abbas

Volcan de Santa Ana #2382 on N

base main cone ~~at~~ - several in  
top trees along road thru farm area.

Rest taken where finally found  
To be common, namely, finca  
shade trees in gap 4500 ft around  
camp. A very characteristic call,  
& could spot them a long way off.  
Feed in top foliage largest trees.  
I don't know whether they arrived  
during latter part of stay or I only  
noticed them then, but they proved  
to be common - groups 4 or 5 -  
around camp. Fly for long distances  
high off ground (like warblers.)

Chilata Common around habitations where  
large dense trees. A pair nesting in <sup>red stone</sup> roof of  
our house. Perched in tall tree near it.

Thraupis cana

I. Olmeca Davis skin

Chilata #2467 skel. Several pairs  
around house & settlement where we  
lived in higher parts of trees. Again  
nesting on or near our bldg.

Abundant & together with abbas.



Marshall (1942)

Piranga leucoptera  
Chilata #2540 from Chilata <sup>category</sup> - look up location in  
Volcan de Santa Ana Contrary to Vank's  
account, this bird was very common  
and occurred in <sup>large</sup> flocks or groups  
wherever found in denser cloud forests.  
1<sup>st</sup> in dense trees on N slope Cerro de los Naranjos  
in same trees with Vermivora superciliosa,  
Chlorophonia, Rynchops, Oreopelia.  
Feeding in high foliage with Chlorophonia  
in sun flarks but easily attracted  
down by owl calls. Both sp. in  
groups throughout this homogeneous  
cloud-forest area on rather steep slope.  
Not a noisy bird - rather quiet.

In the forest of very large fig, oaks,  
etc on Cerro del Aguilón (N E slope)  
they were flocks of 8-9 birds  
occasionally flushed from bushes  
under lg. trees, generally worked up  
very high into trees. [There was a bird -  
about 4 or 5 singing ♂'s on their <sup>top</sup> <sup>trip</sup> <sup>in full view</sup>  
not that sang from <sup>top</sup> <sup>trip</sup> <sup>in full view</sup> highest  
densest trees - same song perches every  
day (several nearby trees, the indiv. birds widely  
spaced) song exactly like house finch. Never  
could hit. One fired into top foliage where  
one was singing - altho many birds foraging  
up there & brought down ♂ Piranga leucoptera :  
Circumstantial evidence that "the bird."]



Marshall (1992)

Piranga ludoviciana

Lake Olomega # 1883 taken ~~probably~~  
~~swamp forest~~.

V de Santa Ana 2 taken - probably  
cypress trees in finca.

Piranga bidentata

(See separate notes for Cacagnatzi <sup>Los</sup> & Eres.)

Volcan de Santa Ana #2320 look up  
location from catalog. Probably  
among large planted trees in finca

Piranga rubra

Lake Olomega Found in large trees  
in mixed woods SW end lake.  
"pit-ick" <sup>2 syll. loud & sharp</sup> not long roll like P. ludoviciana.

Piranga flava

Lake Olomega SW end lake.  
also W slope Los Eses miles 1 pair  
# 2246 taken. A very char. call

Habia rubra and Habia salvini

Lake Olomega In field I got to tell these  
apart by calls, but have forgotten them.

In flocks, salvini more numerous, working  
very close to ground. Found (1) Hiscopol plus  
under giant trees head canyon in Colinas (2) <sup>low</sup> Brush in  
or vines on stone wall mixed wood SW end lake (3) <sup>as in stone walls</sup> Brush in heavily-shaded  
Swamp Forest. Usually on ground in this brush.



Marshall (1942)

Saltator atriceps

Lake Olomega

Mixed woods in lowlands  
Not frequent, but in small flocks

V de Santa Ana

Flocks often heard

or seen

on portion of Cerro de

Los Naranjos

where 2nd growth low

forest

(here also

were green

Concan

flocks)

Chilata

Noted

- # 2491

Saltator grandis

Lake Olomega

1st lone specimen

Taken in sm tree edge wood  
at lake side

Next found

only in open low woods with

bare ground, occasional bush

patch, winding sloughs at

W end lake (not Swamp Forest -

this is dry ground).

This

mixed habitat had more kinds

of birds than anywhere else around

the lake. <sup>only in 3 trees, however.</sup> They were hard to get

and stayed in interior of sm dense trees.

Call a whistle: - - - 4 clear notes.

Chilata Call or song incessantly rendered, pair

in our yard, stayed concealed in dense small

trees. Rather common throughout in

mixed large & small trees.





Marshall (1942)

Atlapetes gutturalis

Volcande Santa Ana - (1) In loose, continuous brush cover under widely spaced large trees on SE side Cerro del Aguila (pairs) forage on <sup>where turdus essimilis</sup> ground (2) In continuous <sup>pure</sup> brushland on summit of Jeco (above camp) on same ground with Dendrocygna and Volatinia jacarina (but not in lowland weedy brush). Singing. Very local. Common in the brushy area on summit Jeco however - several pairs. Another example of high zone bird common at Los Esesimiles & rare or local on Santa Ana.

Melospiza bicincta

W slope Los Esesimiles Dry brush along trail. Volcan de Santa Ana Coffee finca - only certain spots - where a pair or more <sup>close by</sup> ~~by~~. Hear same pair every day in same place by scratching of leaves under coffee finca shade trees. Members of a pair stay close together. As far as I could determine, only in flat areas of finca. Like to forage along agave hedges. Call from coffee bushes when alarmed. Chilata Rather common in dry brush.



Marshall (1942)

Zonotrichia capensis

Volcan de Santa Ana Only Summit -  
heard throughout this prairie land  
even down in the flat parts  
of the water dotted with low  
shrubs as shown in the MH  
panorama. Songs heard from  
all parts of this summit  
area where flat brushy areas.  
Very abundant here.

Aimophila rufescens

Volcan de Santa Ana Common on  
dry brush cover grown on S slope  
Cerro del Aguila subsequent to removing  
original forest. A place occupied by  
lower zone "non-native" birds like  
Caperca, Thamnophilus, etc. therefore  
rather peculiar for Aimophila. Often  
hopping right in road - same spot  
every day - <sup>Several Pairs</sup> a pair here.  
Chilata Rather common in dry  
<sup>sunny</sup> brush on <sup>edges of fields</sup> hillsides - forages on  
ground - likes bare ground of road  
or trail as at W slope Los Escamiles,  
of the Cerro del Aguila. Grassland  
only at San Ignacio. Same bushes  
as A. ruficauda at Chilata.



Marshall (1942)

Aimophila ruficauda

Lake Olomega. - <sup>On conspicuous small flats</sup> Abundant, but only where patches of brush out in open fields of grassland or edge these fields on SW corner of lake. 8 or more birds together in one patch dry brush very noisy, hard to approach. ~~the~~ Were in same brush piles with Melospiza <sup>+ Colaptes</sup> but not green brush near water but where Synallaxis was. Long ratchety calls distinctive.

Chilata Dry brush patches along fences edge dry fields on level ground. Several birds together usually or else a pair ♂ & ♀. Only around cultivated flat sunny fields. Not where trees.

Volatinia jacarina

Lake Olomega Great flocks several hundred birds mixed with seed-eaters <sup>in brushy</sup> in grassland & wet grass at edge lake. Fly to brush patches when disturbed. Push on grass stems & hop on ground. Usually only in most open country. Vde Santa Ana, common brush summit Jeco 16500 ft. & brushy patches where E. albicularis found.

Chilata Common in plowed fields and grassy areas.



Marshall (1942)

Passerina cyanea

Valle Santa Ana

# 2433

look up catalog

I think along brushy gulches in  
Castor Bean plantations where E. alligulalis.  
Lake Olomega Abundant around  
edge lake in grassland &  
taking cover in brush patches  
or sparse mimosa in great mixed flocks with  
grass quits, seed-eaters, etc.

Passerina ciris

Lake Olomega In mixed flocks  
mentioned above. Many more  
to themselves in grass around  
mimosa areas. ~~also~~ flying  
into " when flushed.

Cyanocitta parvula

Lake Olomega look up cat # 1981  
Probably in brush at spring edge  
~~near~~ mixed woods SW side  
lake. ~~at~~

Guiraca caerulea

Lake Olomega trees edge grassland. Rare  
Chilata Balsam trees edge fields.  
Common and paired.

Hedymeles ludovicianus

<sup>In trees</sup>  
Not common, but noted & shot both at L. Olomega & Cacaguatig.





Marshall (1942)

Sporophila moreletii

Lake Omega In the flocks at  
~~running~~ edge lake in dry grassland &  
extending into wet grass composed  
of many Volatinia & S. minuta  
& Passerina there would be  
a few of this sp. around  
edges or entirely dissociated  
from flocks. ♂'s were hard to  
find & when they were seen  
were apt to fly great distances.  
∴ very hard to collect. Apt to  
be by themselves. Forage on  
ground, perch in highest available  
bushes in grassland area.

Volcan de Santa Ana - Paris established  
along weedy brush gully on S-facing  
slope or (base) Cerro del Aguilón  
These gullies running thru castor  
bean plantations where no large  
trees. Here were E. albigularis,  
Catharus auranturostris, Passerina  
cyanea, Volatinia jacarina, etc.

The ♂ sing from higher tree  
or top Cypress hedge near gully  
is very shy & hard to approach, and  
sounds just like a goldfinch song.  
Sing in same place every day. heard only  
very early in A.M. Chilata-Acaicamal



Marshall (1942)

Sporophila minuta

Lake Olomega Flocks of hundreds occurred around edge lake in grassland & edge swamps. smaller flocks throughout grassland. spotted throughout grassland. forage on ground ~~close~~ close together. Perch on tall stems sidewise, very curious - great numbers will come around if a few squeaks are uttered. When a flock surprised would fly to bush & Mimosa growth edge swamps.



Marshall (1942)

Syrnus psaltria

Volcan de Santa Ana - 2363 taken  
in trees along road thru  
farm lands N base volcano.

2465 ~~I believe was~~ <sup>♂<sub>15</sub>+</sup> was  
taken from small flock found  
in small trees on road near  
lower limit cloud forest on  
S facing slope Cerro del  
Yunila.





Jacapa

1587

Goterra

1588

Mt Cacaguatigine

1589 -

1758 - 1766

Olomega

→ 1769

1771

-

2030

Los Esesmites

2033

2050

2055

2074

- 2269, 2270

Vde Santa Ana

Laguna de las Ranas 2366 - 2374

Summit

2381 - 2391

→ 2271

2366 - 2372  
2369 L. de las Ranas  
2390-91 etc Summit  
2386

2399, 2466

Chilata

→ 2467

-

2564

2567

2568

2 tanagers  
16 sparrows.



Marshall, J. T., Jr.

Miscellaneous Notes

Oregon to eastern States

(1943-44)

Catalog

General account



Marshall 1943 4

# Catalog

Oregon State College, Corvallis, Oregon

May 23, 1943

MVZ 2700 ♀ *Sorex vagrans* willows near stream 91-35-11-6

Rockwoods State Res. St. Louis Co., Mo.

Dec 19, 1943

" 2701<sup>im</sup> ♀ *Melospiza melodia* brush near stream

Washington Univ. Campus, St. Louis, Mo.

Dec 20, 1943

" skel 2702 ♂ Starling on building  
St. Louis Mo

1944

" 2703 ♂ *Regulus satrapa* in sm. twig trees

" 2704 ♂ *Certhia familiaris* in tree trunk

7 mi sw Lawrence, Douglas Co., Kansas

May 9, 1944

Kansas Univ. 2705 ♂ testes 5 mm *Vireo belli* in patch small trees on hillside

" " 2706 ♂ testes 3.5 mm *Empidonax minimus* near spring, dense small trees, fat 1/8" deep edge field everywhere

" " 2707 ♀ *Dendroica palmarum* tree edge field (st) very sm., fat

" " 2708 ♂ testes 8 mm *Spizella pusilla* ? in open pasture

" " 2709 ♀ ova large " " tree edge pasture

" " 2710 ♂ testes 6 mm *Zonotrichia querula* weed stalk in alfalfa field

" " 2711 ♂ *Spiza americana* testes 7 mm. field

" " 2712 ♀ *Spizella pallida* tree edge pasture very sm., very fat

" " 2713 ♀? *Empidonax minimus* dense trees on hillside very fat

Caney Mt Refuge, Ozark Co., Missouri

May 14, 1944

Univ. Missouri 2714 ♂ testes 3.5 mm. *Dendroica striata* blackpoll 1/4" deep body extremely fat  
small oak edge bald knoll

Virgin stand hardwoods in E-Central Kansas  
owned by Whiteford, a banker in Fontana  
are Pileated Wood  
there.

Whiteford Ranch

Fontana, Kansas.

Pigeon Lake Area.

Marshall 1944

# Catalog

Mountain Home, Baxter Co., Arkansas

May 18

- MVZ 2715 ♂ *Dryobates villosus* <sup>oaks</sup> lower branches oak no fat  
" 2716 ♂ *Myiochanes virens* testes 5 mm slender singing high in oaks over  
" 2717 ♂ *Thryomanes bewickii* testes 6 mm. gray folds

May 19

- " 2718 ♂ *Penthestes* <sup>oaks & trees along dry creek</sup>  
" 2719 ♂ testes 2 mm *Vireo* <sup>white-eyed broad-leaved trees in oak edge pasture</sup> iris white  
" 2720 ♂ *Myiarchus crinitus* testes very large

May 20

Gainesville, Ozark Co., Mo.

- " 2721 ♀ ova small *Dryobates pubescens* <sup>sycamores in stream valley</sup>  
" 2722 ♂ *Cardinal* testes 10 mm <sup>dead sycamore in valley</sup>  
" 2723 ♀ *Centurus* <sup>may 21 yellow-billed</sup> ovum 3 mm <sup>oak on wooded hill</sup>  
May 21 → 2724 ♀ *Coccyzus* ovum 5 mm. <sup>trees along pasture</sup>  
" 2725 ♂ *Cyanocitta cristata* testes 5 mm. <sup>base cypress in hillside</sup>  
" 2726 ♀ *Caprimulgus carolinensis* laying ovum 20 mm <sup>no brood patch</sup>

(still light) 6 pieces of white sharp gravel about 2-3 mm diam in stomach - otherwise empty except for few insect hard parts.

- shine chip 9x5 mm cut end stomach  
" 2727 ♂ *Antrostomus carolinensis* 15± beetles in stomach <sup>after dark no gravel in stomach</sup>  
" 2728 ♀ *Melanerpes* <sup>tail snag floor of hole</sup> ovum 3 mm.



Marshall, 1943

Melospiza melodia

May 21 MU Bldg., Ore. State College, Corvallis, Ore.  
At noon watched bird on short  
cut lawn foraging for insects  
would run after a fly one foot at  
a time then stop and drum-  
itself up like a robin. Feet would  
twinkle and body remain very  
stable. In slow walk would  
jerk head back & forth & blackbird.  
Mixed hopping, feet & slow  
walking continually.

270 Ore. State Coll. Campus, Corvallis, Ore.

give new consecutive number  
2700 <sup>vagrants</sup>  
~~over~~ ^ P

May 23, 1943

91-935-11-6

Sept 11, 1943. Park at a title  
Rifle Range, Santa Ana, Calif.  
Lg, brown, with  
streaks below & ventral  
spots. Group of  
same. In tuft of

grand dunes  
Oregon State College, Corvallis, Ore.

April 15: only about 8-10 birds on site canyon

May April 22: late afternoon - flocks of 10 high in air going NW -  
loud calls. Gr. reduction in numbers.

May 16 Lewis Woodpecker on canyon  
Evening grackles diminishing. Peak numbers

May 21 around 1st note of May (when seeds fell. over)

Evening Grosbeak

May 23

Many left

May 24

almost all gone dozen or so left

May 25

only a handful left



*General account*

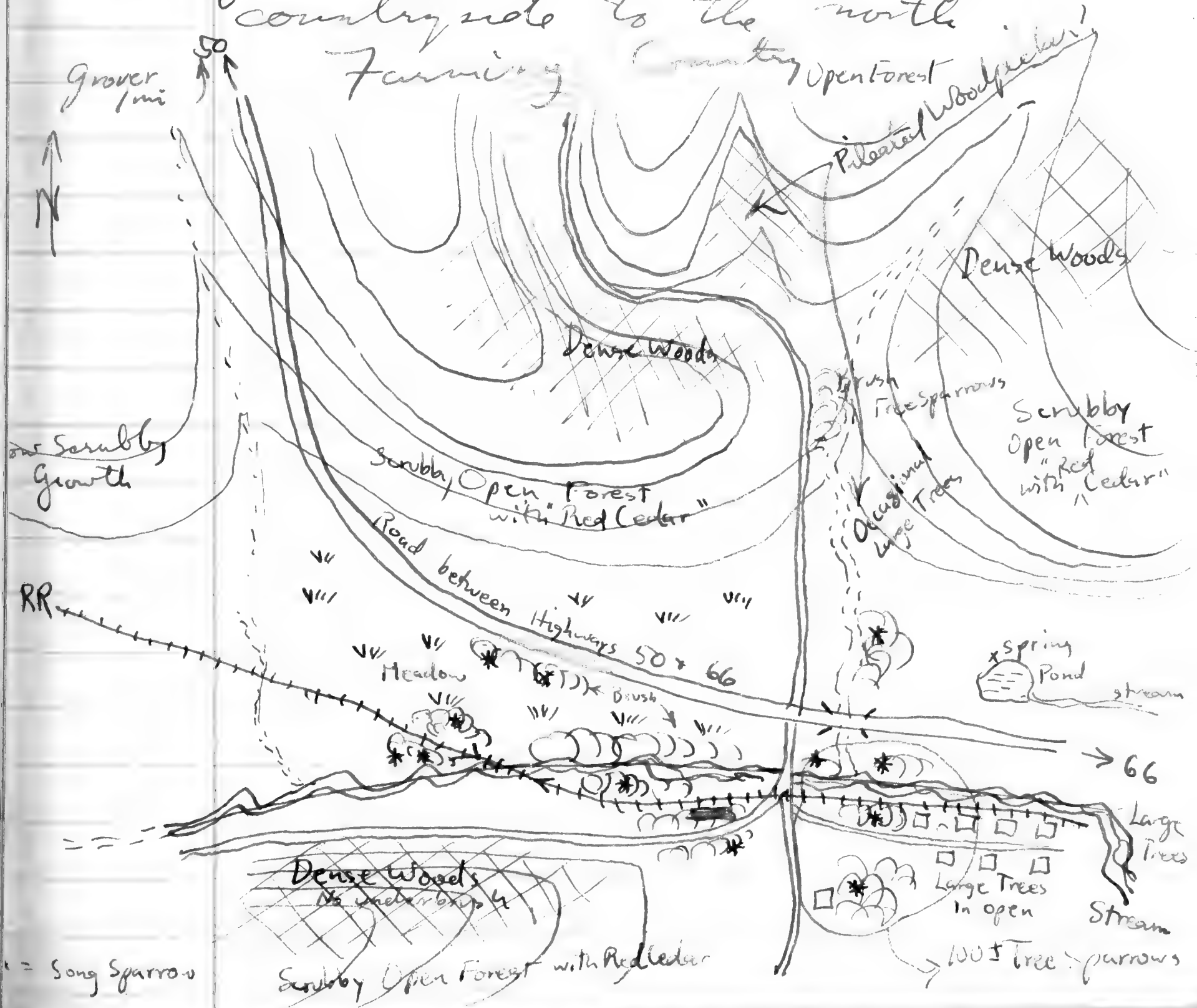


Marshall, 1943

General Account

Rockwoods State Reservation, 1 mi. S Grover,  
St. Louis Co. Mo. December 19 1943

Hitched out from St. Louis 25-30 mi  
due West to grove on highway 50, then  
walked 1 mi S to the reservation,  
several sq. mi. in extent, consisting  
of a broad stream valley and  
heavily-wooded side canyons  
cut down about 200-300 ft  
from the surrounding flat  
country, note to the north.





Marshall, 1943

2

## General Account

Rockwoods State Reservation St. Louis Co., Mo.

Cold slightly overcast. Was Dec 19  
in Res from 10 AM - 3 PM. Greater  
activity among birds (vocal) in AM.

Flocking: In dense forests on N slopes  
mostly juncos with few tree sparrows.  
In brush land along stream (shown on  
map): Upstream mostly juncos, in  
circled area where much annual  
flowering plants composites & ∴ more  
seeds were flocks mostly of tree  
sparrows with song sparrows, cardinals,  
English sparrows, Fox sparrow.

*Questionable* Red tailed Hawk 1 circling over meadow Downy  
Pileated Woodpecker? 2 Very loud "wick-wick"  
flicker-like calls heard & 2 birds  
seen in large trees there on map,  
but only for a moment & in flight.  
White on wings appeared to be  
2aries! ~~Probably Red head~~ <sup>Not OK for Pileated</sup> but very  
loud & certainly seemed almost  
large as crow. Couldn't trace or follow  
at all.

Flicker 1 heard in lg. trees in open SE  
corner of map.

Hairy Woodpecker 4-5 <sup>single</sup> In dense wood on N slope  
& 1 in large trees by the house.

Downy Woodpecker <sup>single</sup> Common everywhere



Marshall 1943

## General Account

Rakood State Res. St. Louis Co. Mo.  
except in meadow. <sup>Dec 19</sup>

One in brush & pecking on weed  
stems, one working on a house.

Blue jay 3 in woods in groups - also in meadow

Titmouse 25 mostly in trees lining  
stream & edge meadow but  
also in forest.

Chickadee 20 everywhere with Titmouse

White-breasted Nuthatch 10 Only in  
denser forest. Feared

Yes -  
Carolina Wren

Thryothorus? 2 Rolling loud calls - Deep  
reddish-brown color, side white  
supercilious. Feared. In

brush along stream. Calls same as *Th. modestus*

Hermit Thrush 1 Typical "tup" call.

Watched it feeding by darting flight  
from wood on black berry  
growing on dead vines edge  
brush along highway.

Bluebird - 6 Small flock up &  
down stream & over head.

English Sparrow 15 <sup>flocks</sup> Generally distr. in  
brush & trees around meadow.

~~most~~ <sup>near</sup> the houses. Not as  
near to the houses as would expect.

Cardinal 10 Either high up in <sup>taller</sup> trees  
or on ground in weeds & brush.





Marshall, 1943

4

## General Account

Rockwood State Res. St. Louis Co., Mo., Dec 19

Cardinal (10) Every <sup>environment except</sup> meadow. <sup>the local "brown towhee"</sup> Single or often paired.

Goldfinch 50± Flocks along stream mingled with juncos & tree sparrows.

Also seen in woods at edge.

Junco 100± Flocks - edge woods, and along stream.

Tree Sparrow - 100± A few flocks in woods, occasional individuals in tops dense timber, but largest flock in <sup>woods</sup> brush land near houses. Feed close together on ground. Loud clear robust notes.

Fox Sparrow 1 in weeds.

Song Sparrow (12) <sup>in dense</sup> brush along or near stream, as marked on map. 2. Two males were singing matches of song at noon.

♀ im <sup>2701</sup> 2601 Taken with dig shot.

Dec 20, 1943

2702 ♂ Starling 2602 shot. Taken as singing on down. Flight reminds me of a swift!



Marshall, 1943

Stris varia

Dec 9 Washington Univ. St. Louis, Missouri

Dark, Cloudy day, cold. No wind.

At noon walked across campus to  
Chancellor of Univ Throop's property which  
includes a large heavily wooded  
(deciduous) winter. There were many  
Crows & Jays. I have this habit  
to attract them. Instead of  
coming to me, they all started  
excitedly around me & I heard owl  
which appeared presently on the side of  
a church then moved thru the  
woods & around city blocks each  
flight about 50 yds. when I first  
saw it it was about 100 yds away  
in a tree. I looked at it when  
I looked Crows dove at it & it  
when I moved it flew. Flight  
low & easy, with much wing  
gliding. Went whole length of woods &  
back, then thru town, finally went  
into a house chimney at 20 Wydown Terrace.  
Didn't come out into the house. Landowner said  
he saw it try to get out but it couldn't.  
Saw during the chase for squirrels, Titmouse,  
Juncos. Other birds seen on campus: Starling,  
Downy Woodpecker, Flicker, Eng. Sparrow, Cardinal, Sparrow Hawk

Dec 11 Freezing in am. clear. Starlings bathing in icy puddle! <sup>in afternoon</sup>



Marshall 1949

*Hylocichla ustulata*

Apr 22

O'Reilly General Hospital, Springfield,  
Mo.

10:30 PM Whistles going over -  
heard. Many night, little  
wind. That heard then  
last night went out of  
doors heard none, gave whistle  
and many answered. going  
north.

Apr 25

Dead specimen picked up on lawn  
at main gate. Very grey.  
1st yr. sex? Maimed - may have  
run into wire.

Seen commonly in trees East edge town  
until we left <sup>Apr 27, 30, May 1</sup> May 2. foraged in  
trees more than we seen before fly to  
trunk & cling sideways - solitaires  
& pick off insects. Much more active  
as gets dark.

Mt. Home, Carter Co., Ark.

May 14

Great numbers going N. heard  
at night; many whistles. Clear calm.  
Heard call like grey checked Thrush also.  
Fairview, Clark Co., Ark.

May 20

Many answered my whistles at  
night, going overhead.



Marshall 1944

## General Account

April 29, 30, May 1 East side Springfield Mo.

This area was beyond the edge town, included a wide expanse of fields, some wet meadow, a creek flowing in a storm drain and then along a road bordered by trees, several patches of medium-sized trees, and in the field, a large patch of dead umbelliferous stalks.

Cooper Hawk 1 over field

Sparrow Hawk 1 <sup>over</sup> field

Bobwhite 2 brush along creek

Killdeer 1 field

Dove fields 15 ±

Chimney Swift in

Flicker 10 ± trees in open

Red-headed Wbpr 2 trees in open

Downy " 2 <sup>trees in yard</sup> ~~woods~~

Kingbird 1 field

Martin 2 air

Crow 3 over field

Titmouse 6-10 woods

Nuthatch 1-4 woods

House Wren several <sup>around house</sup> along creek in trees

Brewer Wren several <sup>in</sup> trees & brush

Sl-billed Marsh Wren 1 wet meadow

Mocker 2 trees in open

Thrasher 2 " " "





Marshall 1944

2

## General Acct

Springfield Mo.

Robin several pairs on lawns  
Bluebird 1 in tree in open field  
Veery 2 1 on lawn 1 in trees edge and  
foraging in tree flying to trunk  
& perching on it sideways

Chive-b. Thrush same as above 15±

C. Waxwings 2 or 3 perched top tree on stream Apr 30

Starling 5 overhead lawns.

Philadelphia vireo? trees 1

~~Warbling Vireo edge stream~~

~~Solitary? " belted. " "~~

Yellow Warbler 2 trees along creek

Tennessee " 10± trees

Palm Warbler 2 Umbelliferous stalks pump tail easily  
Yellowthroat 6± stalks & meadow  
Meadowlark 8 field & singing tops trees in open

Redwing 2 to bushes along creek in open

Grackle lawns

Cowbird fields

Cardinal 12± trees everywhere

Goldfinch many trees in open

Towhee 2 trees around yard.

Chippy trees edge fields

Field Sparrow in open bushes in field meadow

Wh-thr " bushes in trees

Lincoln's " 2 Umbelliferous stalks & meadow

Swamp Sparrow 1 " " " wet "



Marshall 1944

3

General Acit

May 1 O'Reilly General Hospital Springfield Mo.

AM Clear sunny. A large flock  
finchillids on lawn between ramp  
and officers mess. When startled  
moved toward edge lawn & bushes  
planted along ramp. Could see  
them clearly out windows of  
ramp. 1 tree at edge lawn  
filled with singing white-crowns  
& Clay-colored Sparrows.

Tennessee Warbler 1 feeding on lawn  
crouched very low picking seeds off grass  
stalks - moved near a white-crown,  
who walked up to it, grabbed it  
by the folded tail and hung on  
for 3 or 4 sec. while the warbler  
fluttered & hopped trying to get away.  
Then the sparrow let go and both  
continued feeding within a foot of each  
other.

Indigo Bunting 5 or 6 bushes & grass

Chipping 7 or 8

Clay-Colored Sparrow 30± singing & buzzing

White-crowned " 15± squatting and  
spreading themselves out in sun.

Lincoln's Sparrow 12± feeding well  
out on lawn with other sparrows.



Marshall

1944

4.

## General Acct

Springfield Mo.

April <sup>for</sup> Other birds seen:  
Nighthawk, Horned Lark, Jay, Chukadee,  
Ruby-cr. Kinglet (at hospital April 11 or 12),  
Warbling Vireo?

May 24 <sup>29</sup> Park and country east of town: in  
addition to those listed previously:  
Yellow-billed <sup>dense woods</sup> cuckoo, Crested Flycatcher <sup>only</sup>,  
Phoebe <sup>bridge</sup>, Traill Flycatcher, <sup>willows</sup> Pewee <sup>woods</sup>,  
Crow (woods edge farms), & Dickcissel  
fields along highway)

May 9 7 mi SW Lawrence, Douglas Co., Kansas

This area consist of wide flat  
fields with central meandering  
stream heavily lined with trees  
and low flat ridges - 50 ± ft  
high with very gradual slopes and  
heavily wooded. See catalog  
for places where specimens taken.  
Along W slope of ridge when  
woods petered out into yarse trees  
and then orchards were where  
most birds were, everything imaginable  
and in great numbers and profusion.  
Great mixed flocks of migrating  
sparrows (Harris, clay-colored, with  
chipping),



Marshall 1944

5.

## General Acct

May 9 7 mi SW Lawrence, Douglas Co, Kansas  
tried to get grasshopper sparrows  
which I heard about once every  
15-20 min. Dickcissels very  
abundant & loudly singing.  
Lark Sparrows, Lincoln sparrows,  
Least flycatchers, Chippys,  
abundant. Both E. & W. Kingbirds  
in fields. See "Check list  
of Kansas Birds" for birds  
recorded in Lawrence, Kansas about May  
4-9, marked 0. 5<sup>th</sup> or 6<sup>th</sup> witnessed  
gt flock of swift disappear into  
chimney of large bldg in town. 8:30 PM  
About the 6<sup>th</sup> saw a Strix varia  
in town chased by jays, etc.  
In the country, the birds are  
much more abundant and varied  
than in the west.

Attached is "Check list of  
Kansas Birds" WS Long, 1940





Marshall, J. 1944

## Check-List of Kansas Birds

W. S. LONG, Salt Lake City, Utah

It has been more than twenty years since the publication of a complete list of the birds of Kansas. During this time a great many new forms have been added to the list, and additional information has been gathered as to the status of many subspecies which interbreed within the state. Much still remains to be done before a complete study can be made, but it is felt that enough additional data have been gathered to justify publishing another list at this time.

Western Kansas still offers an open field of study for someone living there who is willing to devote a great deal of hard, but pleasant work, and most of his (or her) spare time to it. Information as to the winter birds of western Kansas is particularly desirable.

Kansas is approximately four hundred miles long, from east to west, and two hundred miles wide. For the most part, it appears to the casual traveler to be a wide, flat monotonous plain, without a break except where the infrequent streams have cut deeply into the rocks. However, there is a gradual rise in elevation from 750 feet in the east, at Kansas City, to more than 4,000 feet in Wallace county, near the Colorado line.

In the early days most of the state was covered with a growth of prairie grasses, but during the last twenty-five years wheat has become an important crop, and much of the prairie sod has been plowed up. In certain sections of the western half of the state one can drive an automobile for an hour at a time and see nothing but wheat fields as far as the eye can reach. As a result, many of the prairie birds which formerly abounded no longer exist in the region. The western two-thirds of the state is largely treeless, except for narrow strips along the streams, where scattering groves of cottonwood or willow are found.

Drainage is to the east and southeast, except in the extreme northwestern corner, where it is to the northeast. The rivers, for the most part, are wide, shallow streams, with a very slight flow of water, except in infrequent times of flood. In the extreme southwest, the Cimarron is dry for the greater part of the year. In the east, however, the rivers are large and fairly deep, carrying a good volume of water. The most important rivers of the state are the Republican, Smoky Hill, Kansas, Arkansas, Cimarron and Neosho. The Missouri river forms the northeastern border of the state, but has little effect upon the fauna, except in a very limited area. The Arkansas and the Cimarron are the most important to the bird life of the state, since they form broad highways from the Rocky Mountain region, down which a very pronounced wave of western birds comes every winter. Not enough work has been done in this region in winter to determine the full extent of numbers and species of birds which move down these rivers into western Kansas.

Geographically, Kansas is in the zone of intergradation of most of the eastern and western subspecies, as well as some of the northern and southern

forms. As a result, it is almost impossible to classify many of the summer resident birds to subspecies with any degree of certainty. Such birds as nighthawks, red-winged blackbirds, robins, mockingbirds, and lark sparrows are so variously intermediate that any attempt to place certain specimens in one subspecies or another must necessarily depend upon the personal equation to an unwarranted extent. Only by a careful study of a large series of breeding birds from every section of the state, and by comparing them with typical eastern and western forms, can one hope to outline and map the ranges, and the zones of intergradation with any degree of accuracy. At the present time, our collections are inadequate for such an undertaking, since specimens from the most critical localities are usually lacking. As a result, the range of most of the birds is known only in a very general way.

In this list I have attempted to give a short and concise statement, in a single sentence, of the present status of each bird, and if the status has changed in recent years, of the former status as well. Names enclosed in brackets are considered as forming a hypothetical list. Such a list is a difficult undertaking, since ornithologists do not agree as to the best criteria for it. Some urge that any species occurring within fifty or one hundred miles of the state line should be listed. Others take the opposite extreme and exclude everything not supported by known specimens. I have not included anything in the hypothetical list which has not been reported seen or taken in the state.

Very few pure sight records are included in the list proper, but a number which have been reported as killed in the state are included if the authority seems good. Thus the black vulture, white-necked raven, American raven, Mexican cormorant, ruffed grouse and a few others are included, even though the specimens have been lost.

In the preparation of this list I have examined a number of collections in the various institutions of the state, both to check up on rarities reported in published records and in the hope of finding species and subspecies not reported. The following collections were examined, and I wish to express my thanks to those who have charge of them for the very courteous treatment which I received at all times: University of Kansas Museum of Birds and Mammals, and the Wetmore collection, at Lawrence; the Goss collection, at Topeka; the Rinker collection at Hamilton; the Matthews collection at Wichita University; the collection of the Kansas State Teachers College, at Emporia, and the collection of the Kansas State Agricultural College at Manhattan, including the Blachly collection.

The present paper is a condensed form of a thesis prepared at the University of Kansas. Acknowledgment is here made to all of those persons who have helped in the preparation of the paper. Mr. C. D. Bunker, assistant curator in charge, of the Museum of Birds and Mammals, University of Kansas, has lost no opportunity to be of aid in this study. It was he who suggested the work in the first place, and who gave encouragement throughout. He turned over the entire collection of the Museum to my use, and made possible several field trips without which this work would not have been as complete as it is.

The following persons have helped in the identification of specimens: Dr. Alexander Wetmore, Dr. Harry C. Oberholser, Dr. J. Grinnell, Dr. Herbert Friedmann, Dr. Alden H. Miller, and Dr. James L. Peters. In addition, I am

indebted to Dr. A. Wetmore, Dr. W. L. McAtee, Dr. E. R. Kalmbach, Dr. J. Grinnell and Dr. Louis B. Bishop for the use of specimens for comparative purposes.

I have had the use of notes, and various field reports from observers in all parts of the state, which were invaluable in compiling data showing distribution and migration. For these I wish to thank Dr. Jean M. Linsdale, Mr. A. J. Kirn, Mr. Ralph J. Donahue, Miss Florence Barth, Mr. Wilfred Goodman, Mrs. O. B. Baldwin, Mr. Frank M. Alexander, Mr. G. A. Whitney, Mr. R. T. Shanstrum, Mr. P. B. Peabody, Mr. C. W. Hibbard, Dr. A. B. Leonard, Mr. J. D. Black, Dr. J. M. Porter and Dr. H. H. Lane. I have drawn freely from the literature, but too much space would be required to list all of the references cited in the original thesis.

### LIST OF SPECIES

1. *Gavia immer immer* (Brünnich). Common Loon. Rare, transient. An unsexed specimen in the Wetmore collection (No. 1,653) taken at McPherson, is the only one known from the state.

2. *Gavia immer elasson* Bishop. Lesser Loon. Uncommon, transient throughout the state. Specimens have been taken at Neosho Falls, Leavenworth, Burlington, Douglas county, Wichita and Morton county.

3. *Gavia stellata* (Pontoppidan). Red-throated Loon. Accidental. One specimen, now in the Museum of Zoölogy, University of Michigan, was taken on October 20, 1925, on the Marais des Cygnes river, near Ottawa.

4. *Colymbus grisegena holboelli* (Reinhardt). Holboell's Grebe. Accidental. Logan I. Evans took a specimen on the Kansas river a few miles east of Lawrence on October 29, 1910.

5. *Colymbus auritus* Linnaeus. Horned Grebe. Accidental. The only authentic record is of one taken at Manhattan on September 30, 1878. A specimen in the Matthews collection at Wichita University was probably taken in that vicinity but has no data.

6. *Colymbus nigricollis californicus* (Heermann). Eared Grebe. Formerly common; now a rare migrant. There are many records for the state, but none in recent years.

7. *Aechmophorus occidentalis* (Lawrence). Western Grebe. Casual visitant. Only three specimens are on record, and none have been seen since 1901.

8. *Podilymbus podiceps podiceps* (Linnaeus). Pied-billed Grebe. Common migrant; irregular summer resident throughout the state. It occurs in the state between March and November.

9. *Pelecanus erythrorhynchos* Gmelin. White Pelican. Common migrant throughout the state. This large bird is most often seen on the larger rivers and lakes in the fall and spring.

10. *Pelecanus occidentalis occidentalis* Linnaeus. Eastern Brown Pelican. Accidental. The only specimen is one found dead near Parker, Linn county, on June 6, 1916.

11. *Phalacrocorax auritus auritus* (Lesson). Double-crested Cormorant. Occasional migrant. There are many specimens, most of which were taken on the larger rivers of the state.

\*12. *Phalacrocorax olivaceus mexicanus* (Brandt). Mexican Cormorant. Accidental. A single bird was taken four miles south of Lawrence on April 2,

1872. The present location of the specimen is unknown, but it was properly identified by S. F. Baird and Robert Ridgway.

13. *Anhinga anhinga* (Linnaeus). Water-Turkey. Formerly an occasional straggler. Records are as follows: Rooks county, August, 1881; Meade county, May 1, 1888; Missouri river, near Kansas City, in 1882 and 1898.

14. *Fregata magnificens* Mathews. Man-o'-war-bird. Accidental. One was killed on the North Fork of the Solomon river, in Osborne county, by Frank Lewis, on August 16, 1880.

15. *Ardea herodias herodias* Linnaeus. Great Blue Heron. Common summer resident, breeding locally. This race is probably confined to the north-eastern part of the state, intergrading with the next race in the central part.

16. *Ardea herodias wardi* Ridgway. Ward's Heron. Probably a summer resident in southeastern Kansas. Specimens referable to this race have been taken in Douglas and Labette counties.

17. *Ardea herodias treganzai* Court. Treganza's Heron. Probably a summer resident in Western Kansas. An immature female was taken in Seward county on November 1, 1934.

18. *Casmerodius albus egretta* (Gmelin). American Egret. Occasional summer visitant. There are a number of records in July, August and September from the eastern half of the state.

19. *Egretta thula thula* (Molina). Snowy Egret. Rare summer visitant; formerly fairly common. Like the American egret, this species occurs in late summer. Specimens have been taken in July, August and September in the eastern half of the state.

20. *Florida caerulea caerulea* (Linnaeus). Little Blue Heron. Common summer visitant in southeastern Kansas; occasional farther north. There are many late summer records of this bird in eastern Kansas. Most of these are the white immature birds.

✓ 21. *Butorides virescens virescens* (Linnaeus). Eastern Green Heron. Common summer resident in the eastern half of the state. It is found in wooded sections along rivers and creeks.

22. *Nycticorax nycticorax hoactli* (Gmelin). Black-crowned Night Heron. Common summer resident, in suitable localities, throughout the state. Distribution is local and spotty, for this heron nests in cottonwood groves near marsh land.

23. *Nyctanassa violacea violacea* (Linnaeus). Yellow-crowned Night Heron. Occasional summer resident in southeastern Kansas. There are a number of breeding records as far north as Greenwood county.

24. *Botaurus lentiginosus* (Montagu). American Bittern. Occasional summer resident, common migrant, in all parts of the state.

25. *Ixobrychus exilis exilis* (Gmelin). Eastern Least Bittern. Probably an irregular summer resident. Many specimens have been taken in the summer months in the eastern part of the state, but there are no records of nests found.

26. *Mycteria americana* Linnaeus. Wood Ibis. Casual straggler. There are three records as follows: Chetopa, 1883; Ellis, March 26, 1885; and Goodland, October 1, 1913.

27. *Plegadis guarauna* (Linnaeus). White-faced Glossy Ibis. Occasional summer visitant. There are four Kansas specimens, as follows: Douglas

county, October, 1879; McPherson, April 29, 1891; Pratt county, September 15, 1916; and Johnson county, October 6, 1923. There are other sight records.

28. *Ajaia ajaja* (Linnaeus). Roseate Spoonbill. Accidental. One was taken in Butler county, March 20, 1899, by Dr. R. Matthews.

29. *Cygnus columbianus* (Ord). Whistling Swan. Formerly a common migrant; now rare. It occurs throughout the state.

30. *Cygnus buccinator* Richardson. Trumpeter Swan. Formerly an occasional migrant; now almost extinct. Two Kansas specimens are in the Kansas University Museum, taken on March 23, 1888, and in April, 1888, at Lawrence.

31. *Branta canadensis canadensis* (Linnaeus). Common Canada Goose. Fairly common migrant throughout the state.

32. *Branta canadensis leucopareia* (Brandt). Lesser Canada Goose. Uncommon migrant. Four specimens are known.

33. *Branta canadensis hutchinsi* (Richardson). Hutchins's Goose. Rare migrant. Only two specimens are known. It is very probable that all forms of geese are more common than the few specimens indicate, since comparatively few geese find their way to museums.

34. *Branta bernicla hrota* (Müller). American Brant. Very rare migrant. There are a number of records, but only one specimen is known. It was taken in Leavenworth county on November 15, 1879.

35. *Anser albifrons albifrons* (Scopoli). White-fronted Goose. Occasional migrant; formerly common. There are many records and specimens from the eastern half of the state.

36. *Chen hyperborea hyperborea* (Pallas). Lesser Snow Goose. Common migrant throughout the state. This probably is the most common goose in the state at the present time.

37. *Chen caerulescens* (Linnaeus). Blue Goose. Occasional migrant. There are a number of specimens and sight records from the eastern half of the state.

38. *Anas platyrhynchos platyrhynchos* Linnaeus. Common Mallard. Rare summer resident; common migrant throughout the state. There are a number of breeding records from all sections of the state.

39. *Anas rubripes rubripes* Brewster. Red-legged Black Duck. Occasional migrant on the Missouri river; rare elsewhere. Four specimens, taken in Douglas county and Doniphan county, have been referred to this subspecies.

40. *Anas rubripes tristis* Brewster. Common Black Duck. Rare migrant in the extreme east. Two specimens, one taken in Douglas county and the other in Pratt county, are known.

41. *Anas fulvigula maculosa* Sennett. Mottled Duck. Formerly an occasional straggler. There are four specimens of this duck on record, taken in Douglas county, Neosho Falls and Emporia. It has not been recorded since 1890.

42. *Chaulelasmus streperus* (Linnaeus). Gadwall. Occasional migrant; formerly a rare summer resident. It occurs in all parts of the state.

43. *Mareca americana* (Gmelin). Baldpate. Fairly common migrant throughout the state. No definite breeding records are known.

44. *Dafila acuta tzitzihua* (Vieillot). American Pintail. Common migrant. One of the most common of the waterfowl, which is found in all parts of the state.

45. *Nettion carolinense* (Gmelin). Green-winged Teal. Fairly common migrant; formerly abundant. Found in all parts of the state, but does not nest.



46. *Querquedula discors* (Linnaeus). Blue-winged Teal. Occasional summer resident; common migrant throughout the state.
47. *Querquedula cyanoptera* (Vieillot). Cinnamon Teal. Rare migrant; formerly a possible summer resident. It is seen most often in the western part of the state.
48. *Spatula clypeata* (Linnaeus). Shoveller. Common migrant; formerly a rare summer resident. Found in every county in the state.
49. *Aix sponsa* (Linnaeus). Wood Duck. Rare summer resident; formerly common. This beautiful duck was reported only from the eastern part of the state.
50. *Nyroca americana* (Eyton). Redhead. Rare migrant; formerly common. It occurs in all parts of the state.
51. *Nyroca collaris* (Donovan). Ring-necked Duck. Occasional migrant; formerly common. Found most commonly in the east.
52. *Nyroca valisneria* (Wilson). Canvasback. Fairly common migrant. This bird is found in all parts of the state.
- [*Nyroca marila* (Linnaeus). Greater Scaup Duck. Reported in many state lists, but no specimens are known. Placed here in the Hypothetical List.]
53. *Nyroca affinis* (Eyton). Lesser Scaup Duck. Common migrant throughout the state. One of the most common species in both spring and fall.
54. *Glaucionetta clangula americana* (Bonaparte). American Goldeneye. Uncommon migrant throughout the state. Seven specimens are known.
55. *Glaucionetta islandica* (Gmelin). Barrow's Goldeneye. Uncommon migrant. Six specimens from Douglas and Leavenworth counties are in the Kansas University museum.
56. *Charitonetta albeola* (Linnaeus). Bufflehead. Rare migrant; formerly common. It occurs throughout the state.
57. *Clangula hyemalis* (Linnaeus). Old-squaw. Rare straggler. There are a number of records from the eastern part of the state, and one from Coolidge.
58. *Somateria v-nigra* Gray. Pacific Eider. Accidental. One specimen of this eider was taken on the Kansas river near Lecompton, on November 3, 1891, by A. L. Wiedimann. Identification of the specimen has been checked by Doctor Wetmore.
59. *Melanitta deglandi* (Bonaparte). White-winged Scoter. Rare straggler. Eight specimens were taken in Leavenworth and Douglas counties between 1927 and 1932.
60. *Melanitta perspicillata* (Linnaeus). Surf Scoter. Rare straggler. Six specimens have been taken in Douglas and Sedgwick counties.
61. *Oidemia americana* Swainson. American Scoter. Accidental. Two specimens were taken in Douglas county in 1908.
62. *Erismatura jamaicensis rubida* (Wilson). Ruddy Duck. Occasional migrant; formerly common. This little duck is more common in the west, but there are many specimens from the eastern part of the state.
63. *Lophodytes cucullatus* (Linnaeus). Hooded Merganser. Occasional migrant throughout the state; formerly a rare summer resident.
64. *Mergus merganser americanus* Cassin. American Merganser. Common migrant throughout the state; occasional winter resident.

65. *Mergus serrator* Linnaeus. Red-breasted Merganser. Occasional migrant; rare winter resident. All records are from the eastern part, but it probably occurs in the west as well. It is often confused with the preceding species, especially in the winter plumage.

\*✓ 66. *Cathartes aura septentrionalis* Wied. Turkey Vulture. Common summer resident. It is not as common as it used to be, because farmers no longer leave dead animals in the fields.

\* 67. *Coragyps atratus atratus* (Meyer). Black Vulture. Formerly common; now extinct in the state. Probably exterminated before 1900.

68. *Elanoides forficatus forficatus* (Linnaeus). Swallow-tailed Kite. Formerly a common summer resident; now a rare straggler. This kite has been reported only as far west as Manhattan. There are a number of specimens, all taken in the early history of the state.

69. *Ictinia mississippiensis* (Wilson). Mississippi Kite. Common summer resident in Barber and Comanche counties; rare elsewhere. There is one breeding record from Douglas county.

70. *Astur atricapillus atricapillus* (Wilson). Eastern Goshawk. Rare and irregular winter visitant. Ten specimens in the Kansas University collection were taken in the winter of 1916-'17. There are other specimens taken in other winters.

\* 71. *Accipiter velox velox* (Wilson). Sharp-shinned Hawk. Fairly common winter resident throughout the state.

72. *Accipiter cooperi* (Bonaparte). Cooper's Hawk. Common resident throughout the state. There are many breeding records.

\*✓ 73. *Buteo borealis borealis* (Gmelin). Eastern Red-tailed Hawk. Common resident in eastern Kansas. Winters abundantly in the southern part of the state.

74. *Buteo borealis krideri* Hoopes. Krider's Hawk. Occasional winter resident. There are a number of specimens in the Kansas University collection and several in the Rinker collection at Hamilton.

75. *Buteo borealis calurus* Cassin. Western Red-tailed Hawk. Common winter resident in the west; occasional in the east.

76. *Buteo borealis harlani* (Audubon). Harlan's Hawk. Common winter resident. This subspecies of the red-tailed hawk winters abundantly in southern Kansas.

77. *Buteo lineatus lineatus* (Gmelin). Northern Red-shouldered Hawk. Rare summer resident in extreme eastern Kansas.

✓ 78. *Buteo platypterus platypterus* (Vieillot). Broad-winged Hawk. Uncommon summer resident. There are two breeding records from Douglas county.

\* 79. *Buteo swainsoni* Bonaparte. Swainson's Hawk. Common summer resident in the west; occasional migrant. During the fall migration this large hawk occurs in flocks of thousands on the open prairies.

80. *Buteo lagopus s. johannis* (Gmelin). American Rough-legged Hawk. Common winter resident in the west; occasional in the east.

81. *Buteo regalis* (Gray). Ferruginous Rough-leg. Common resident in western Kansas; rare in the east. This is one of the most common hawks in the state in the winter.

*Buteo borealis*



82. *Parabuteo unicinctus harrisi* (Audubon). Harris's Hawk. Accidental. One shot near Wichita on December 14, 1918. Another was taken near Lawrence on December 25, 1918.

83. *Aquila chrysaetos canadensis* (Linnaeus). Golden Eagle. Formerly a common resident; now uncommon, except in winter. This fine bird is very seldom seen except in winter in the western part of the state.

84. *Haliaeetus leucocephalus leucocephalus* (Linnaeus). Southern Bald Eagle. Occasional winter visitant. Like the last species, this eagle is so reduced in numbers that it is no longer common.

85. *Circus hudsonius* (Linnaeus). Marsh Hawk. Summer resident locally; common winter resident. This is the most abundant hawk in the state, year after year. There are a number of breeding records.

86. *Pandion haliaetus carolinensis* (Gmelin). Osprey. Occasional. There are no breeding records; it is found only in the eastern part of the state.

87. *Falco rusticolus obsoletus* Gmelin. Black Gyrfalcon. Accidental. One was killed near Manhattan by A. L. Runyon on December 1, 1880.

88. *Falco mexicanus* Schlegel. Prairie Falcon. Formerly a common resident; now uncommon except in the extreme west. A few specimens have been taken in the east.

89. *Falco peregrinus anatum* Bonaparte. Duck Hawk. Formerly a common resident; now rare.

90. *Falco columbarius columbarius* Linnaeus. Eastern Pigeon Hawk. Rare migrant; formerly common. There are no breeding records.

91. *Falco columbarius richardsoni* Fidgway. Richardson's Pigeon Hawk. Formerly a common migrant in the west; now rare. There are a number of specimens, most of them from Ellis county.

92. *Falco columbarius bendirei* Swann. Western Pigeon Hawk. Accidental. A single specimen was taken by Dr. Louis Watson in Ellis county in October or November, 1875.

93. *Falco sparverius sparverius* Linnaeus. Eastern Sparrow Hawk. Common summer resident in the east; occasional in the winter.

94. *Falco sparverius phalaena* (Lesson). Desert Sparrow Hawk. Probably a summer resident in the extreme west. Not enough skins are available to determine the exact status of these two subspecies, but it is probable that the desert sparrow hawk does not occur east of Trego county.

95. *Bonasa umbellus umbellus* (Linnaeus). Eastern Ruffed Grouse. Formerly a common resident; now extinct in Kansas. The last one was killed before 1900.

96. *Tympanuchus cupido americanus* (Reichenbach). Greater Prairie Chicken. Formerly an abundant resident; now rare in the east and uncommon in the west.

97. *Tympanuchus pallidicinctus* (Ridgway). Lesser Prairie Chicken. Formerly a common resident in the south and west; now rare.

98. *Pedioecetes phasianellus campestris* Ridgway. Prairie Sharp-tailed Grouse. Formerly a common resident; now probably extinct in the state. None have been reported for fifty years.

99. *Colinus virginianus virginianus* (Linnaeus). Eastern Bobwhite. Fairly common resident in the east, but not as abundant as formerly.



100. *Colinus virginianus taylori* Lincoln. Western Bobwhite. Common resident in the western part of the state, in suitable localities. Probably occurs as far east as the Flint Hills.

101. *Callipepla squamata pallida* Brewster. Arizona Scaled Quail. Fairly common resident in southwest, at least as far north as the Arkansas river.

102. *Phasianus colchicus torquatus* Gmelin. Ring-necked Pheasant. Introduced; common in northwestern Kansas.

✓ 103. *Meleagris gallopavo silvestris* Vieillot. Eastern Turkey. Formerly an abundant resident; now extinct in the state. Formerly it probably occurred along all of the timbered streams.

104. *Grus americana* (Linnaeus). Whooping Crane. Formerly a common migrant throughout the state; now almost extinct.

105. *Grus canadensis canadensis* (Linnaeus). Little Brown Crane. Formerly a common migrant; now rare.

106. *Grus canadensis tabida* (Peters). Sandhill Crane. Formerly an abundant migrant; now only occasional.

107. *Rallus elegans elegans* Audubon. King Rail. Common summer resident in suitable localities.

108. *Rallus limicola limicola* Vieillot. Virginia Rail. Irregular migrant; sometimes common. There are no definite breeding records.

109. *Porzana carolina* (Linnaeus). Sora. Rare summer resident; common migrant.

110. *Coturnicops noveboracensis* (Gmelin). Yellow rail. Uncommon migrant. Because of its secretive habits, this rail probably is more common than the few records indicate.

111. *Creciscus jamaicensis stoddardi* Coale. Black Rail. Rare summer resident in suitable localities.

112. *Ionornis martinica* (Linnaeus). Purple Gallinule. Rare straggler. About five specimens of this southern bird are on record.

\* 113. *Gallinula chloropus cachinnans* Bangs. Florida Gallinule. Rare summer resident in suitable localities. There are many specimens, but only one breeding record, from Coffey county.

\* 114. *Fulica americana americana* Gmelin. American Coot. Common summer resident in suitable localities.

115. *Charadrius melodus* Ord. Piping Plover. Rare Migrant. Four specimens are known from Douglas and Stafford counties, and there are one or two additional sight records.

116. *Charadrius nivosus tenuirostris* (Lawrence). Cuban Snowy Plover. Occasional summer resident in Clark and Comanche counties; a migrant, only, in most of the rest of the state.

117. *Charadrius semipalmatus* Bonaparte. Semipalmated Plover. Occasional migrant throughout the state.

118. *Eupoda montana* (Townsend). Mountain Plover. Common summer resident in western Kansas. This plover occurs only on the native grassy prairies of the extreme west.

✓ 119. *Oxyechus vociferus vociferus* (Linnaeus). Killdeer. Common summer resident throughout the state.

120. *Pluvialis dominica dominica* (Müller). American Golden Plover. Formerly an abundant migrant; now uncommon.

121. *Squatarola squatarola* (Linnaeus). Black-bellied Plover. Occasional migrant.

122. *Arenaria interpres morinella* (Linnaeus). Ruddy Turnstone. Casual migrant. Two specimens have been taken, at Topeka, and at Hamilton, Greenwood county. There are a few other sight records.

123. *Philohela minor* (Gmelin). American Woodcock. Formerly a rare summer resident; now an occasional migrant.

124. *Capella delicata* (Ord). Wilson's Snipe. Common migrant throughout. Occurs in every county where suitable habitat is found.

125. *Numenius americanus americanus* Bechstein. Long-billed Curlew. Rare summer resident in western Kansas; occasional migrant in the rest of the state.

[*Phaeopus hudsonicus* (Latham). Hudsonian Curlew. Reported only by Goss, who mentioned no specimens. Since none has ever been taken in the state it is placed in the Hypothetical List until more information is available.]

126. *Phaeopus borealis* (Forster). Eskimo Curlew. Formerly an abundant migrant in eastern Kansas; now probably totally extinct.

127. *Bartramia longicauda* (Bechstein). Upland Plover. Common summer resident in southern and western Kansas; occasional in the northeast. This fine upland bird has been increasing in recent years.

128. *Actitis macularia* (Linnaeus). Spotted Sandpiper. Common summer resident in suitable localities.

129. *Tringa solitaria solitaria* Wilson. Eastern Solitary Sandpiper. Common migrant in eastern Kansas.

130. *Tringa solitaria cinnamomea* (Brewster). Western Solitary Sandpiper. Probably a common migrant in the west; occasional in the east.

[*Catoptrophorus semipalmatus semipalmatus* (Gmelin). Eastern Willet. All specimens examined proved to be the next subspecies. Placed in the Hypothetical List until specimens are obtained.]

131. *Catoptrophorus semipalmatus inornatus* (Brewster). Western Willet. Occasional migrant, more common in the west than in the east.

132. *Totanus melanoleucus* (Gmelin). Greater Yellow-legs. Formerly a common migrant; now rather rare.

133. *Totanus flavipes* (Gmelin). Lesser Yellow-legs. Common migrant throughout the state.

134. *Calidris canutus rufus* (Wilson). American Knot. Casual migrant. There is one specimen taken at Hamilton, Greenwood county, on September 19, 1911, and one or two other indefinite records.

135. *Pisobia melanotos* (Vieillot). Pectoral Sandpiper. Common migrant throughout the state.

136. *Pisobia fuscicollis* (Vieillot). White-rumped Sandpiper. Occasional migrant.

137. *Pisobia bairdi* (Coues). Baird's Sandpiper. Occasional migrant, locally common.

138. *Pisobia minutilla* (Vieillot). Least Sandpiper. Common migrant throughout the state.

139. *Pelidna alpina sakhalina* (Vieillot). Red-backed Sandpiper. Occasional migrant. There are a number of specimens from Douglas and Greenwood counties.

140. *Limnodromus griseus griseus* (Gmelin). Eastern Dowitcher. Very rare migrant. The only known Kansas specimen was taken on April 26, 1919, near Lucas, Russell county.

141. *Limnodromus griseus scolopaceus* (Say). Long-billed Dowitcher. Occasional migrant. There are a number of specimens from localities in the eastern part of the state.

142. *Micropalama himantopus* (Bonaparte). Stilt Sandpiper. Locally common migrant.

143. *Ereunetes pusillus* (Linnaeus). Semipalmated Sandpiper. Common migrant throughout the state.

144. *Ereunetes maurii* Cabanis. Western Sandpiper. Common, but rather local, migrant.

145. *Tryngites subruficollis* (Vieillot). Buff-breasted Sandpiper. Occasional migrant. About six specimens are known.

146. *Limosa fedoa* (Linnaeus). Marbled Godwit. Very rare migrant. Three specimens, taken in Shawnee county and at Neosho Falls, are known.

147. *Limosa haemastica* (Linnaeus). Hudsonian Godwit. Formerly a common migrant; now rare. Most of the existing specimens are from the eastern part of the state.

148. *Crocethia alba* (Pallas). Sanderling. Very rare migrant. There are only three records from Kansas as follows: Lawrence, October 7, 1874; Douglas county, October, 1881; Little Salt Marsh, Stafford county, July 18, 1925.

149. *Recurvirostra americana* Gmelin. Avocet. Formerly a fairly common straggler; now rare. Has been reported a summer resident in southwestern Kansas, but there are no nesting records.

150. *Himantopus mexicanus* (Müller). Black-necked Stilt. Rare migrant, except locally, in southern Kansas.

151. *Phalaropus fulicarius* (Linnaeus). Red Phalarope. Casual migrant. There are two records, one from Lake View, Douglas county, November 5, 1905, and the other near Ottawa, Franklin county, on October 25, 1926.

152. *Steganopus tricolor* Vieillot. Wilson's Phalarope. Formerly a rare summer resident; now a common, but irregular migrant.

153. *Lobipes lobatus* (Linnaeus). Northern Phalarope. Specimens have been taken in Wallace and Greenwood counties. Observers reported it from Salina, Blue Rapids and Wichita.

154. *Stercorarius parasiticus* (Linnaeus). Parasitic Jaeger. Accidental. A male in the Kansas University collection was taken on the Kansas river, Douglas county, on October 10, 1898.

155. *Larus argentatus smithsonianus* Coues. Herring Gull. Occasional migrant. Specimens have been taken in Douglas and Leavenworth counties.

156. *Larus californicus* Lawrence. California Gull. Accidental. A single specimen was taken by Goss on the Arkansas river, in Reno county, October 20, 1880.

157. *Larus delawarensis* Ord. Ring-billed Gull. Occasional migrant, common locally.

158. *Larus pipixcan* Wagler. Franklin's Gull. Common migrant, locally, throughout the state. Most common on the high plains west of the Flint Hills.

159. *Larus philadelphia* (Ord). Bonaparte's Gull. Occasional migrant. Several specimens have been taken at Yates Center, Burlington, Doniphan county and Douglas county.

160. *Xema sabini* (Sabine). Sabine's Gull. Casual migrant. Only two specimens taken at Humboldt on September 19, 1876, and at Hamilton on October 3, 1909, are known.

161. *Sterna forsteri* Nuttall. Forster's Tern. Occasional migrant; fairly common locally. Reported only from the eastern half of the state, but should occur in the west as well.

162. *Sterna hirundo hirundo* Linnaeus. Common Tern. Casual migrant. Two specimens from Kansas are known; one was taken in Anderson county on May 11, 1878, and another at Hamilton on September 2, 1912. There are two sight records from the Missouri side of the Missouri river, near Kansas City.

163. *Sterna antillarum antillarum* (Lesson). Least Tern. Common summer resident, breeding locally. On July 1, 1936, Otto Tiemeier, of the Kansas University Museum, found five nests on sandbars of the Arkansas river at Coolidge.

164. *Hydroprogne caspia imperator* (Coues). Caspian Tern. Accidental. Two specimens were taken on the Kansas river, near Lawrence on September 27, 1928.

165. *Chlidonias nigra surinamensis* (Gmelin). Black Tern. Probably an occasional summer resident; common migrant.

✓ 166. *Zenaidura macroura carolinensis* (Linnaeus). Eastern Mourning Dove. Abundant summer resident; occasional in winter in the south.

167. *Zenaidura macroura marginella* (Woodhouse). Western Mourning Dove. Abundant summer resident in the west; occasional in the east. Intergrades with *carolinensis* in the central part of the state.

168. *Ectopistes migratorius* (Linnaeus). Passenger Pigeon. Formerly an irregular summer resident; now totally extinct. Only a very few specimens from Kansas are in existence.

169. *Conuropsis carolinensis ludovicianus* (Gmelin). Louisiana Paroquet. Formerly a common resident; now probably totally extinct.

✓ 170. *Coccyzus americanus americanus* (Linnaeus). Yellow-billed Cuckoo. Common summer resident in the east; rare in the west.

171. *Coccyzus erythrophthalmus* (Wilson). Black-billed Cuckoo. Occasional summer resident in eastern Kansas.

172. *Geococcyx californianus* (Lesson). Road-runner. Resident in southern and southwestern Kansas. Walter Colvin found this bird breeding in Cowley county in 1934.

173. *Crotophaga sulcirostris sulcirostris* Swainson. Groove-billed Ani. Accidental. A single specimen was taken in Lyon county on November 1, 1904, by a farmer.

174. *Tyto alba pratincola* (Bonaparte). Barn Owl. Common resident throughout the state.

175. *Otus asio naevius* (Gmelin). Eastern Screech Owl. Common resident in northeastern Kansas. Limits of range not worked out.

176. *Otus asio hasbroucki* Ridgway. Hasbrouck's Screech Owl. Resident in southeastern Kansas. Included on the basis of two specimens from Greenwood county, identified by H. C. Oberholser.

177. *Otus asio aikenii* (Brewster). Aiken's Screech Owl. Common resident in western Kansas. Exact limits of range not worked out.

178. *Bubo virginianus virginianus* (Gmelin). Great Horned Owl. Common resident in eastern Kansas.

179. *Bubo virginianus occidentalis* Stone. Montana Horned Owl. Common resident in the west. Exact limits of range not worked out.

180. *Nyctea nyctea* (Linnaeus). Snowy Owl. Rare and irregular winter visitant. There are many mounted specimens of this large owl in the state.

181. *Speotyto cunicularia hypugaea* (Bonaparte). Western Burrowing Owl. Common summer resident in the western half of the state. The distribution of this owl is dependent to a great extent upon the prairie dog, and as that rodent becomes less common, the owl does also.

182. *Strix varia varia* Barton. Northern Barred Owl. Common resident, except in the extreme west and the southeast.

✓ 183. *Strix varia alleni* Ridgway. Florida Barred Owl. Common resident in southeastern Kansas. Based on a specimen taken nine miles south of Columbus, on June 21, 1915.

184. *Asio wilsonianus* (Lesson). Long-eared Owl. Occasional resident, common locally, throughout the state.

185. *Asio flammeus flammeus* (Pontoppidan). Short-eared Owl. Uncommon resident, breeding locally; common in winter.

186. *Cryptoglaux acadica acadica* (Gmelin). Saw-whet Owl. Rare winter visitant throughout the state.

✓ 187. *Antrostomus carolinensis* (Gmelin). Chuck-will's-widow. Fairly common summer resident in southeastern Kansas.

✓ 188. *Antrostomus vociferus vociferus* (Wilson). Eastern Whippoorwill. Common summer resident in eastern Kansas, in suitable localities.

189. *Phalaenoptilus nuttalli nuttalli* (Audubon). Nuttall's Poorwill. Occasional summer resident throughout the state.

190. *Chordeiles minor minor* (Forster). Eastern Nighthawk. Common summer resident in northeastern Kansas.

✓ 191. *Chordeiles minor chapmani* Coues. Florida Nighthawk. Common summer resident in southeastern Kansas, as far north and west as Greenwood county, at least.

192. *Chordeiles minor howelli* Oberholser. Howell's Nighthawk. Common summer resident in western Kansas, probably as far east as the Flint Hills.

193. *Chordeiles minor sennetti* Coues. Sennett's Nighthawk. Common migrant throughout the state. Taken in Douglas, Cherokee, Morton, Barber and Lane counties.

194. *Chordeiles minor henryi* Cassin. Western Nighthawk. Probably an occasional migrant. Three specimens in the collection of Dr. Louis Bishop were taken at Hamilton, Greenwood county.

195. *Chordeiles minor hesperis* Grinnell. Pacific Nighthawk. Probably a rare migrant throughout the state. Oberholser lists a single specimen taken at Hamilton, Greenwood county, on September 10, 1913.

✓ 196. *Chaetura pelagica* (Linnaeus). Chimney Swift. Common summer resident throughout the state.

✓ 197. *Archilochus colubris* (Linnaeus). Ruby-throated Hummingbird. Fairly common summer resident in eastern Kansas; occasional in the west.

198. *Megaceryle alcyon alcyon* (Linnaeus). Eastern Belted Kingfisher. Common summer resident throughout the state.

199. *Colaptes auratus luteus* Bangs. Northern Flicker. Common resident in the east; occasional in the west.



200. *Colaptes auratus auratus* (Linnaeus). Southern Flicker. Common resident in southeastern Kansas.

201. *Colaptes cafer collaris* Vigors. Red-shafted Flicker.<sup>1</sup> Common resident in western Kansas; rare in the east in winter.

202. *Ceophloeus pileatus abieticola* Bangs. Northern Pileated Woodpecker. Formerly a fairly common resident in northeastern Kansas.

203. *Ceophloeus pileatus pileatus* (Linnaeus). Southern Pileated Woodpecker. Formerly a common resident in southeastern Kansas.

204. *Centurus carolinus* (Linnaeus). Red-bellied Woodpecker. Common resident in eastern Kansas, as far west as Comanche county.

205. *Melanerpes erythrocephalus* (Linnaeus). Red-headed Woodpecker. Common summer resident; occasional in winter.

206. *Asyndesmus lewis* Gray. Lewis's Woodpecker. Probably a rare summer resident in the western part of the state. There is one record from Lawrence on November 7, 1908.

207. *Sphyrapicus varius varius* (Linnaeus). Yellow-bellied Sapsucker. Occasional migrant in eastern Kansas.

208. *Sphyrapicus varius nuchalis* Baird. Red-naped Sapsucker. Probably a rare winter visitant in extreme western Kansas. Two specimens were taken by Goss at Wallace on October 12 and 14, 1883.

[*Sphyrapicus thyroideus nataliae* (Malherbe). Natalie's Sapsucker. Dr. J. M. Porter reported that he saw an adult male at Concordia on April 4, 1935. In the absence of a specimen this species must be placed in the Hypothetical List for the present].

209. *Dryobates villosus villosus* (Linnaeus). Eastern Hairy Woodpecker. Common resident throughout the state.

210. *Dryobates pubescens medianus* (Swainson). Northern Downy Woodpecker. Common resident throughout the state, except Labette and Montgomery counties.

211. *Dryobates pubescens pubescens* (Linnaeus). Southern Downy Woodpecker. Common resident in Labette and Montgomery counties.

212. *Tyrannus tyrannus* (Linnaeus). Eastern Kingbird. Common summer resident throughout the state.

213. *Tyrannus tyrannus* Say. Arkansas Kingbird. Common summer resident in the west; occasional east of the Flint Hills.

214. *Muscivora forficata* (Gmelin). Scissor-tailed Flycatcher. Common summer resident in southern and central Kansas. It occurs regularly as far north as Chanute, and occasionally as far west as Coolidge.

215. *Myiarchus crinitus boreus* Bangs. Northern Crested Flycatcher. Common summer resident in the east; occasional in the west.

216. *Sayornis phoebe* (Latham). Eastern Phoebe. Common summer resident in the east; occasional in the west.

217. *Sayornis saya saya* (Bonaparte). Say's Phoebe. Common summer resident in the west.

218. *Empidonax flaviventris* (Baird and Baird). Yellow-bellied Flycatcher. Rare migrant. Six specimens, all from Douglas county, are on record.

---

1. Most of the red-shafted flickers found in Kansas are hybrids between *Colaptes cafer collaris* and *Colaptes auratus lateus*, and may exhibit almost any combination of colors between the red of *cafer* and the yellow of *auratus*.

219. *Empidonax virescens* (Vieillot). Acadian Flycatcher. Occasional summer resident in the east.

220. *Empidonax trailli brewsteri* Oberholser. Little Flycatcher. Rare migrant. Specimens have been taken at Neosho Falls, in Labette county, and in Douglas county.

221. *Empidonax trailli trailli* (Audubon). Alder Flycatcher. Occasional summer resident; common migrant. *Springfield*

222. *Empidonax minimus* (Baird and Baird). Least Flycatcher. Common migrant throughout the state.

223. *Myiochanes virens* (Linnaeus). Eastern Wood Pewee. Common summer resident in the east; rare in the west.

224. *Myiochanes richardsoni richardsoni* (Swainson). Western Wood Pewee. Rare migrant. Two specimens have been taken at Wallace, and one at Hamilton.

225. *Nuttallornis borealis* (Swainson). Olive-sided Flycatcher. Occasional migrant.

226. *Otocoris alpestris hoyti* Bishop. Hoyt's Horned Lark. Occasional winter resident in the eastern part of the state.

227. *Otocoris alpestris alpestris* (Linnaeus). Northern Horned Lark. Occasional winter resident.

228. *Otocoris alpestris leucolaema* (Coues). Desert Horned Lark. Common summer resident west of the Flint Hills; abundant winter resident.

229. *Otocoris alpestris praticola* Henshaw. Prairie Horned Lark. Common resident in the eastern part of the state.

230. *Iridoprocne bicolor* (Vieillot). Tree Swallow. Common migrant; summer resident along the Missouri river. Linsdale found many nests in Doniphan county.

231. *Riparia riparia riparia* (Linnaeus). Bank Swallow. Common summer resident in suitable localities.

232. *Stelgidopteryx ruficollis serripennis* (Audubon). Rough-winged Swallow. Fairly common summer resident, breeding locally.

233. *Hirundo erythrogaster* Boddaert. Barn Swallow. Common summer resident throughout the state.

234. *Petrochelidon albifrons albifrons* (Rafinesque). Northern Cliff Swallow. Common summer resident, breeding locally.

235. *Progne subis subis* (Linnaeus). Purple Martin. Common summer resident in the east; occasional in the west.

236. *Cyanocitta cristata cristata* (Linnaeus). Northern Blue Jay. Common summer resident; resident in the south.

237. *Aphelocoma californica woodhousei* (Baird). Woodhouse's Jay. Occasional resident in the southwestern corner of the state. There are five specimens from Morton county.

237a. *Aphelocoma sieberii arizonae* Ridgway. Arizona Jay. A stray in Clark county in 1906. (See paper by Keith, ahead in this volume)—Editor.

238. *Pica pica hudsonia* (Sabine). American Magpie. Common resident in the extreme west.

239. *Corvus corax sinuatus* Wagler. American Raven. Formerly a common resident; now extinct in the state. This bird disappeared with the buffalo.

240. *Corvus cryptoleucus* Couch. White-necked Raven. Formerly a rare resident in the west; now extinct in the state.

241. *Corvus brachyrhynchos brachyrhynchos* Brehm. Eastern Crow. Common resident in the east; occasional in the west. Migrates through the center of the state in untold millions.

242. *Cyanocephalus cyanocephalus* (Wied). Pinon Jay. Occasional winter visitant in the west; rare in the east.

243. *Nucifraga columbiana* (Wilson). Clark's Nutcracker. Occasional winter visitant in the west.

✓ 244. *Penthestes atricapillus atricapillus* (Linnaeus). Black-capped Chickadee. Fairly common resident in the east.

245. *Penthestes atricapillus septentrionalis* (Harris). Long-tailed Chickadee. Common resident in the west, north of the Arkansas river; occasional in the east in winter.

246. *Penthestes carolinensis agilis* (Sennett). Plumbeous Chickadee. Common resident in southern Kansas.

✓ 247. *Baeolophus bicolor* (Linnaeus). Tufted Titmouse. Common resident in the east.

248. *Sitta carolinensis carolinensis* Latham. White-breasted Nuthatch. Common resident in eastern Kansas.

249. *Sitta carolinensis atkinsi* Scott. Florida Nuthatch. Common resident in Labette and Montgomery counties.

250. *Sitta carolinensis nelsoni* Mearns. Rocky Mountain Nuthatch. Has been taken in Morton county; exact status unknown.

251. *Sitta canadensis* Linnaeus. Red-breasted Nuthatch. Occasional winter resident throughout the state.

252. *Certhia familiaris americana* Bonaparte. Brown Creeper. Uncommon winter resident.

✓ 253. *Troglodytes aedon parkmani* Audubon. Western House Wren. Common summer resident in the east; occasional in the west.

254. *Nannus hiemalis hiemalis* (Vieillot). Eastern Winter Wren. Occasional winter resident.

255. *Thryomanes bewicki bewicki* (Audubon). Bewick's Wren. Accidental. Dr. C. E. Johnson collected a specimen of this wren two miles south of Lawrence on April 10, 1920.

✓ 256. *Thryomanes bewicki cryptus* Oberholser. Texas Wren. Common summer resident, occasional resident, in the southern part of the state.

257. *Thryomanes bewicki niceae* Sutton. Nice's Wren. Common resident in extreme southwest Kansas.

✓ 258. *Thryothorus ludovicianus ludovicianus* (Latham). Carolina Wren. Common resident in eastern Kansas.

259. *Telmatodytes palustris dissaëptus* (Bangs). Prairie Marsh Wren. Rare summer resident; occasional migrant.

260. *Cistothorus stellaris* (Naumann). Short-billed Marsh Wren. Rare migrant.

261. *Salpinctes obsoletus obsoletus* (Say). Common Rock Wren. Common summer resident in western Kansas; rare in the east.

✓ 262. *Mimus polyglottos polyglottos* (Linnaeus). Eastern Mockingbird. Common summer resident in the southeast.



263. *Mimus polyglottos leucopterus* (Vigors). Western Mockingbird. Common summer resident in the west.

✓ 264. *Dumetella carolinensis* (Linnaeus). Catbird. Common summer resident throughout the state. Most common in the east.

✓ 265. *Toxostoma rufum* (Linnaeus). Brown Thrasher. Common summer resident throughout the state.

266. *Turdus migratorius migratorius* Linnaeus. Eastern Robin. Common summer resident; occasional resident. Confined to northeastern Kansas.

✓ 267. *Turdus migratorius achrusterus* (Batchelder). Southern Robin. Common resident in southeastern Kansas. Occurs as far north as Lawrence.

268. *Turdus migratorius propinquus* Ridgway. Western Robin. Common resident in western Kansas. Sometimes occurs in the east in winter.

269. *Ixoreus naevius meruloides* (Swainson). Northern Varied Thrush. Accidental. One was taken in Finney county by H. W. Menke, on October 17, 1891.

✓ 270. *Hylocichla mustelina* (Gmelin). Wood Thrush. Common summer resident in the east; rare in the west.

271. *Hylocichla guttata sequoiensis* (Belding). Sierra Hermit Thrush. Rare migrant in the western part of the state. One was taken in Lane county, September 27, 1912.

272. *Hylocichla guttata faxonii* Bangs and Penard. Eastern Hermit Thrush. Irregular migrant, sometimes common.

✓ 273. *Hylocichla ustulata swainsoni* (Tschudi). Olive-backed Thrush. Common migrant throughout the state.

✓ 274. *Hylocichla minima aliciae* (Baird). Gray-cheeked Thrush. Fairly common migrant.

275. *Hylocichla fuscescens salicicola* Ridgway. Willow Thrush. Rare migrant. Several specimens have been taken in the eastern part of the state.

✓ 276. *Sialia sialis sialis* (Linnaeus). Eastern Bluebird. Common resident in the east; uncommon in the west.

[*Sialia mexicana bairdi* Ridgway. Chestnut-backed Bluebird. This bird has been reported as a winter resident at Coolidge, but in the absence of a specimen it is here placed in the Hypothetical list.]

277. *Sialia currucoides* (Bechstein). Mountain Bluebird. Common winter resident in the west; rare in the east.

278. *Myadestes townsendi* (Audubon). Townsend's Solitaire. Occasional winter resident in the west.

✓ 279. *Polioptila caerulea caerulea* (Linnaeus). Blue-gray Gnatcatcher. Common summer resident in the east; migrant in the west.

280. *Regulus satrapa satrapa* Lichtenstein. Eastern Golden-crowned Kinglet. Occasional winter resident; common migrant.

281. *Corthylio calendula calendula* (Linnaeus). Eastern Ruby-crowned Kinglet. Common migrant; occasional winter resident.

282. *Anthus spinoletta rubescens* (Tunstall). American Pipit. Common migrant in the west; occasional in the east.

283. *Anthus spraguei* (Audubon). Sprague's Pipit. Common migrant in the west; rare in the east.

284. *Bombycilla garrula pallidiceps* Reichenow. Bohemian Waxwing. Rare winter resident throughout the state.

285. *Bombycilla cedrorum* Vieillot. Cedar Waxwing. Irregular winter resident.

286. *Lanius borealis borealis* Vieillot. Northern Shrike. Rare winter resident in the east; common in the west.

287. *Lanius borealis invictus* Grinnell. Northwestern Shrike. Occasional winter visitant.

288. *Lanius ludovicianus migrans* Palmer. Migrant Shrike. Common summer resident in the east; occasional in winter.

289. *Lanius ludovicianus excubitorides* Swainson. White-rumped Shrike. Common summer resident in the west; occasional in winter.

290. *Sturnus vulgaris vulgaris* Linnaeus. Starling. Common resident in the southeast. Spreading rapidly westward.

291. *Vireo atricapillus* Woodhouse. Black-capped Vireo. Formerly a summer resident in Comanche county. Has not been found in the state since the time of Goss.

✓ 292. *Vireo griseus griseus* (Boddaert). White-eyed Vireo. Uncommon summer resident in the east.

293. *Vireo belli belli* Audubon. Bell's Vireo. Common summer resident in the eastern part of the state.

✓ 294. *Vireo flavifrons* Vieillot. Yellow-throated Vireo. Occasional summer resident, locally common.

✓ 295. *Vireo solitarius solitarius* (Wilson). Blue-headed Vireo. Occasional migrant.

✓ 296. *Vireo olivaceus* (Linnaeus). Red-eyed Vireo. Abundant summer resident in the eastern part of the state.

297. *Vireo philadelphicus* (Cassin). Philadelphia Vireo. Very rare migrant in the extreme east. Two specimens taken in Doniphan county on September 2 and 24, 1922, are on record.

298. *Vireo gilvus gilvus* (Vieillot). Eastern Warbling Vireo. Common summer resident throughout the state.

✓ 299. *Mniotilta varia* (Linnaeus). Black and White Warbler. Common migrant; rare summer resident, breeding locally.

300. *Protonotaria citrea* (Boddaert). Prothonotary Warbler. Common summer resident in suitable localities.

301. *Helmitheros vermivorus* (Gmelin). Worm-eating Warbler. Rare migrant; possible summer resident.

302. *Vermivora chrysoptera* (Linnaeus). Golden-winged Warbler. Very rare migrant. One specimen was taken three miles south of Lawrence, May 2, 1921.

303. *Vermivora pinus* (Linnaeus). Blue-winged Warbler. Occasional migrant; possibly a rare summer resident.

304. *Vermivora peregrina* (Wilson). Tennessee Warbler. Common migrant in the east.

305. *Vermivora celata celata* (Say). Orange-crowned Warbler. Common migrant throughout the state.

306. *Vermivora ruficapilla ruficapilla* (Wilson). Nashville Warbler. Occasional migrant in the east.

✓ 307. *Compsothlypis americana pusilla* (Wilson). Northern Parula Warbler. Rare summer resident; occasional migrant.

308. *Dendroica aestiva aestiva* (Gmelin). Eastern Yellow Warbler. Common summer resident throughout the state.
309. *Dendroica aestiva rubiginosa* (Pallas). Alaska Yellow Warbler. Occasional migrant. There are four specimens, taken in Douglas county.
310. *Dendroica aestiva sonorana* Brewster. Sonora Yellow Warbler. Accidental. Included on the strength of a specimen taken in Wallace county, June 24, 1911. Identified by Dr. H. C. Oberholser.
311. *Dendroica magnolia* (Wilson). Magnolia Warbler. Occasional migrant. A number of specimens have been taken.
312. *Dendroica tigrina* (Gmelin). Cape May Warbler. Occasional migrant in the extreme east.
313. *Dendroica caerulescens caerulescens* (Gmelin). Black-throated Blue Warbler. Very rare migrant. All known specimens were taken in the western part of the state.
- ✓ 314. *Dendroica coronata* (Linnaeus). Myrtle Warbler. Common migrant in the east; occasional in the west.
315. *Dendroica auduboni auduboni* (Townsend). Audubon's Warbler. Common migrant in the extreme west.
316. *Dendroica virens virens* (Gmelin). Black-throated Green Warbler. Occasional migrant in the east.
317. *Dendroica cerulea* (Wilson). Cerulean Warbler. Formerly a summer resident; now a rare migrant.
318. *Dendroica fusca* (Müller). Blackburnian Warbler. Rare migrant in the east; casual in the west.
- [*Dendroica dominica albilora* Ridgway. Sycamore Warbler. Reported by Goss, but there are no specimens. It is placed in the hypothetical list until further information is gathered.]
319. *Dendroica pensylvanica* (Linnaeus). Chestnut-sided Warbler. Rare migrant, in the extreme east.
- [*Dendroica castanea* (Wilson). Bay-breasted Warbler. Reported at Blue Rapids by P. B. Peabody. No other report of this species has been made. Pending collection of a specimen, it is placed in the hypothetical list.]
- ✓ 320. *Dendroica striata* (Forster). Black-poll Warbler. Fairly common migrant in the east.
321. *Dendroica pinus pinus* (Wilson). Northern Pine Warbler. Very rare migrant in the east.
- ✓ [*Dendroica discolor discolor* (Vieillot). Northern Prairie Warbler. Placed in the hypothetical list because it has not been reported since the time of Goss, and there are no specimens.]
322. *Dendroica palmarum palmarum* (Gmelin). Western Palm Warbler. Occasional migrant in the east.
323. *Seiurus aurocapillus* (Linnaeus). Oven-bird. Occasional migrant in the east.
324. *Seiurus noveboracensis noveboracensis* (Gmelin). Northern Water Thrush. Accidental. One taken by Linsdale and Hall at Lawrence, on May 21, 1921.
325. *Seiurus noveboracensis notabilis* Ridgway. Grinnell's Water Thrush. Occasional migrant in the east.
326. *Seiurus motacilla* (Vieillot). Louisiana Water Thrush. Uncommon summer resident in the east.

327. *Oporornis formosus* (Wilson). Kentucky Warbler. Common summer resident in the east.

328. *Oporornis philadelphia* (Wilson). Mourning Warbler. Occasional migrant in the east.

329. *Oporornis tolmiei* (Townsend). Macgillivray's Warbler. Probably an occasional migrant in the west. One was taken by P. B. Peabody at Blue Rapids on May 22, 1923.

330. *Geothlypis trichas brachidactyla* (Swainson). Northern Yellowthroat. Common summer resident in the northeast.

331. *Geothlypis trichas trichas* (Linnaeus). Maryland Yellowthroat. Common summer resident in the southeast. Specimens have been taken in Cherokee, Labette and Montgomery counties.

332. *Geothlypis trichas occidentalis* Brewster. Western Yellowthroat. Occasional summer resident in the west, as far east as the Flint Hills.

333. *Icteria virens virens* (Linnaeus). Yellow-breasted Chat. Common summer resident in the east.

334. *Icteria virens auricollis* (Lichtenstein). Long-tailed Chat. Common summer resident in the extreme west.

335. *Wilsonia citrina* (Boddaert). Hooded Warbler. Formerly a common summer resident in the east; now rare.

336. *Wilsonia pusilla pusilla* (Wilson). Wilson's Warbler. Occasional migrant throughout the state.

337. *Wilsonia pusilla pileolata* (Pallas). Northern Pileolated Warbler. Probably an occasional migrant in the west. Two specimens have been taken in Douglas county.

338. *Wilsonia canadensis* (Linnaeus). Canada Warbler. Uncommon migrant in the east.

339. *Setophaga ruticilla* (Linnaeus). American Redstart. Common summer resident, breeding locally.

340. *Passer domesticus domesticus* (Linnaeus). English Sparrow. Common resident throughout the state.

341. *Dolichonyx oryzivorus* (Linnaeus). Bobolink. Irregular spring migrant; taken once in fall migration.

342. *Sturnella magna magna* (Linnaeus). Eastern Meadowlark. Common resident in the northeast.

343. *Sturnella magna argutula* Bangs. Southern Meadowlark. Common resident in the southeast. Probably occurs as far north as Lawrence.

344. *Sturnella neglecta* Audubon. Western Meadowlark. Common resident west of the Flint Hills; migrates east in winter.

345. *Xanthocephalus xanthocephalus* (Bonaparte). Yellow-headed Blackbird. Rare summer resident; common migrant in the west.

346. *Agelaius phoeniceus phoeniceus* (Linnaeus). Eastern Redwing. Common summer resident in the east.

347. *Agelaius phoeniceus arctolegus* Oberholser. Giant Redwing. Common migrant throughout the state.

348. *Agelaius phoeniceus fortis* Ridgway. Thick-billed Redwing. Common migrant; possible summer resident in the west. More specimens are needed to determine the exact status of this bird in Kansas.

349. *Icterus spurius* (Linnaeus). Orchard Oriole. Common summer resident in the eastern part of the state.

349a. *Icterus cucullatus nelsoni* Ridgway. Arizona Hooded Oriole. Accidental. Frederick C. Lincoln (Auk 57:420) records an Arizona hooded oriole, banded in Los Angeles, Cal., January 22, 1939, and recovered about August 5, 1939, 10 miles southeast of Garden City, Finney county, Kansas.

350. *Icterus galbula* (Linnaeus). Baltimore Oriole. Common summer resident.

351. *Icterus bullocki* (Swainson). Bullock's Oriole. Common summer resident in the west, wherever trees are available as nesting sites.

352. *Euphagus carolinus* (Müller). Rusty Blackbird. Irregular winter visitant. In some winters this bird is abundant; in others it is completely absent.

353. *Euphagus cyanocephalus* (Wagler). Brewer's Blackbird. Occasional summer resident in the west; rare in the east.

354. *Quiscalus quiscula aeneus* Ridgway. Bronzed Grackle. Common summer resident in the eastern part of the state; occasional in the west.

355. *Molothrus ater ater* (Boddaert). Eastern Cowbird. Common summer resident.

356. *Molothrus ater artemisiae* Grinnell. Nevada Cowbird. Probably a common migrant in the west; occasional in the east.

357. *Piranga ludoviciana* (Wilson). Western Tanager. Rare summer resident in the west. No specimens are known, but there are two published records. It has been seen recently in Cimarron county, Oklahoma, not far west of Kansas.

358. *Piranga erythromelas* Vieillot. Scarlet Tanager. Occasional migrant; breeds locally in the eastern part of the state.

359. *Piranga rubra rubra* (Linnaeus). Summer Tanager. Fairly common summer resident in the east.

360. *Richmondia cardinalis cardinalis* (Linnaeus). Eastern Cardinal. Common resident in the east; rare in the west.

361. *Hedymeles ludovicianus* (Linnaeus). Rose-breasted Grosbeak. Common summer resident in the east.

362. *Hedymeles melanocephalus papago* Oberholser. Rocky Mountain Grosbeak. Common summer resident in the west.

363. *Guiraca caerulea caerulea* (Linnaeus). Eastern Blue Grosbeak. Common summer resident in the southeast.

364. *Guiraca caerulea interfusa* Dwight and Griscom. Western Blue Grosbeak. Common summer resident in the west.

365. *Passerina cyanea* (Linnaeus). Indigo Bunting. Common summer resident in the east.

366. *Passerina amoena* (Say). Lazuli Bunting. Probably a rare summer resident in the west.

367. *Passerina ciris* (Linnaeus). Painted Bunting. Fairly common summer resident in south-central Kansas. There is a record of a pair of these birds which nested on two successive years at Lawrence.

368. *Spiza americana* (Gmelin). Dickcissel. Common summer resident in the eastern half of the state.

369. *Hesperiphona vespertina vespertina* (Cooper). Eastern Evening Grosbeak. Rare and irregular winter visitant. A number of specimens have been taken in the eastern part of the state.

370. *Carpodacus purpureus purpureus* (Gmelin). Eastern Purple Finch. Irregular winter visitant; common when present.

371. *Carpodacus mexicanus frontalis* (Say). Common House Finch. Common resident in the extreme southwestern part of the state. This bird has been taken or reported in Morton, Hamilton and Finney counties.

[*Pinicola enucleator leucura* (Müller). Candaian Pine Grosbeak. Reported by Snow, who was quoted by Ridgway. No specimens have ever been taken, and the bird has not been reported since. It is here placed in the Hypothetical List.]

372. *Acanthis linaria linaria* (Linnaeus). Common Redpoll. Rare and irregular winter visitant. There are records from Neosho Falls, Manhattan, Kansas City, and Lawrence.

373. *Spinus pinus pinus* (Wilson). Northern Pine Siskin. Common but irregular winter visitant; rare summer resident. It nested once at Onaga, May 3, 1920.

✓ 374. *Spinus tristis tristis* (Linnaeus). Eastern Goldfinch. Common resident throughout the state.

375. *Loxia curvirostra neogaea* Griscom. Red Crossbill. Rare winter visitant. Specimens were taken at Lawrence in 1906 and 1920.

376. *Loxia curvirostra pusilla* Gloger. Newfoundland Crossbill. Accidental. One was taken at Burlington on February 1, 1892.

377. *Loxia curvirostra minor* (Brehm). Sitka Crossbill. Accidental. Taken at Lawrence on January 25, 1920.

378. *Loxia curvirostra bendirei* Ridgway. Bendire's Crossbill. Occasional winter visitant. Taken at Lawrence in 1885, 1898, and 1911.

379. *Loxia curvirostra bentii* Griscom. Rocky Mountain Crossbill. Common winter visitant. Has been taken on many occasions in all parts of the state.

380. *Loxia curvirostra stricklandi* Ridgway. Mexican Crossbill. Accidental. One was taken at Lawrence on January 25, 1911.

381. *Loxia leucoptera* Gmelin. White-winged Crossbill. Rare and irregular winter visitant. Reported from a number of scattered localities.

382. *Pipilo erythrophthalmus erythrophthalmus* (Linnaeus). Red-eyed Towhee. Common summer resident; rare in the west.

383. *Pipilo maculatus arcticus* (Swainson). Arctic Towhee. Common migrant in the west; occasional in the east.

384. *Calamospiza melanocorys* Stejneger. Lark Bunting. Common summer resident in the west; rare in the east.

385. *Passerculus sandwichensis savanna* (Wilson). Eastern Savanna Sparrow. Common migrant in the east.

386. *Passerculus sandwichensis alaudinus* Bonaparte. Western Savanna Sparrow. Common migrant throughout the state.

387. *Passerculus sandwichensis nevadensis* Grinnell. Nevada Savanna sparrow. Occasional migrant. Several specimens have been taken in the eastern part of the state.

388. *Ammodramus savannarum australis* Maynard. Eastern Grasshopper Sparrow. Occasional summer resident in the east.

389. *Ammodramus savannarum perpallidus* (Coues). Western Grasshopper Sparrow. Common summer resident throughout the state.



390. *Ammodramus bairdi* (Audubon). Baird's Sparrow. Accidental. A specimen was taken by J. A. Loring at Pendennis, Lane county, on April 25, 1897. It is now in the U. S. Biological Survey collection in the National Museum.

391. *Passerherbulus caudacutus* (Latham). Leconte's Sparrow. Common migrant in the east; occasional winter resident.

392. *Passerherbulus henslowi henslowi* (Audubon). Western Henslow's Sparrow. Rare summer resident; occasional migrant.

393. *Ammospiza caudacuta nelsoni* (Allen). Nelson's Sparrow. Rare migrant. A few specimens have been taken in Douglas, and McPherson counties, and at Neosho Falls.

394. *Pooecetes gramineus gramineus* (Gmelin). Eastern Vesper Sparrow. Common migrant in eastern Kansas.

395. *Pooecetes gramineus confinis* Baird. Western Vesper Sparrow. Common migrant in the west.

◦ 396. *Chondestes grammacus grammacus* (Say). Eastern Lark Sparrow. Common summer resident in eastern Kansas.

397. *Chondestes grammacus strigatus* Swainson. Western Lark Sparrow. Common summer resident in the west.

398. *Aimophila cassini* (Woodhouse). Cassin's Sparrow. Common summer resident in the extreme western part of the state.

399. *Junco aikenii* Ridgway. White-winged Junco. Fairly common winter resident in the extreme western part of the state. Several specimens have been taken in Morton and Wallace counties.

400. *Junco hyemalis hyemalis* (Linnaeus). Slate-colored Junco. Common winter resident in the east; uncommon in the west.

401. *Junco oreganus shufeldti* Coale. Shufeldt's Junco. Common winter resident in the west; rare in the east.

402. *Junco oreganus montanus* Ridgway. Montana Junco. Occasional winter resident. Specimens have been taken in Douglas and Trego counties.

403. *Junco mearnsi* Ridgway. Pink-sided Junco. Common winter resident in the extreme west. Specimens have been taken in Seward, Morton, Hamilton and Wallace counties.

404. *Spizella arborea arborea* (Wilson). Eastern Tree Sparrow. Common winter resident in the east.

405. *Spizella arborea ochracea* Brewster. Western Tree Sparrow. Abundant winter resident throughout the state.

✓◦ 406. *Spizella passerina passerina* (Bechstein). Eastern Chipping Sparrow. Common summer resident in the east.

407. *Spizella passerina arizonae* Coues. Western Chipping Sparrow. Occasional summer resident in the extreme west.

◦ 408. *Spizella pallida* (Swainson). Clay-colored Sparrow. Common migrant throughout the state.

◦ ✓ 409. *Spizella pusilla pusilla* (Wilson). Eastern Field Sparrow. Common summer resident in the east.

410. *Spizella pusilla arenacea* Chadbourne. Western Field Sparrow. Common summer resident in the west; in migration throughout the state.

◦ 411. *Zonotrichia querula* (Nuttall). Harris's Sparrow. Abundant winter resident in the east; rare in the west.

412. *Zonotrichia leucophrys leucophrys* (Forster). White-crowned Sparrow. Common migrant; rare winter resident in the south.

413. *Zonotrichia leucophrys gambeli* (Nuttall). Gambel's Sparrow. Common migrant in the west; occasional in the east.

414. *Zonotrichia albicollis* (Gmelin). White-throated Sparrow. Common migrant; occasional winter resident in the south.

415. *Passerella iliaca iliaca* (Merrem). Eastern Fox Sparrow. Common migrant; occasional winter resident in the east.

(*Passerella iliaca schistacea* Baird. Slate-colored Fox Sparrow. Reported by Snow in 1872, but not reported since, and no specimens are in existence. Placed in the Hypothetical List.)

416. *Melospiza lincolni lincolni* (Audubon). Lincoln's Sparrow. Common migrant throughout the state.

417. *Melospiza georgiana* (Latham). Swamp Sparrow. Common migrant; occasional winter resident in the east.

418. *Melospiza melodia melodia* (Wilson). Eastern Song Sparrow. Common winter resident in the eastern part of the state.

419. *Melospiza melodia beata* Bangs. Mississippi Song Sparrow. Common winter resident as far west as Seward, Trego and Lane counties.

420. *Melospiza melodia juddi* Bishop. Dakota Song Sparrow. Uncommon migrant throughout the state; most common in the east.

421. *Melospiza melodia fallax* (Baird). Mountain Song Sparrow. Common migrant in the extreme west; occurs as far east as Trego county. Probably migrates down the rivers of western Kansas from the Rocky Mountains.

422. *Rhynchophanes mccowni* (Lawrence). McCown's Longspur. Common winter resident in the west; occasional in the east.

423. *Calcarius lapponicus lapponicus* (Linnaeus). Lapland Longspur. Abundant winter resident throughout the state.

424. *Calcarius lapponicus alascensis* Ridgway. Alaska Longspur. Rare winter resident; possibly common in the west.

425. *Calcarius pictus* (Swainson). Smith's Longspur. Common winter resident. Taken in Douglas and Greenwood counties in the east.

426. *Calcarius ornatus* (Townsend). Chestnut-collared Longspur. Formerly a common summer resident in the west; not reported for a number of years. Common winter resident.

427. *Plectrophenax nivalis nivalis* (Linnaeus). Eastern Snow Bunting. Irregular winter visitant; sometimes common. No specimens have been taken. nor has the species been observed, in recent years.



Marshall 1944

6.

## General Account

"Birds of Gainesville, Ozark Co., Mo."

Attached: Leopold & Dalke 1943

"1942 Status of Wild Turkeys in Missouri"

May 11 Gainesville, Ozark Co., Mo. At 8:30 PM Flock about 100 swifts milled about 15' chimney & went in over 20 min per. "Whippoorwill" called all

May 12 AM Hiked to <sup>stream</sup> edge town saw a <sup>night</sup> ~~moon~~ <sup>moon</sup> cuckoo, several 2-winged swallows perched on stubs along stream, went up a cypress-covered slope where a few jays & chickadees. Oaks on other side: Summer Tanager singing (sharp pli-tick), Indigo Bunting singing in burned area, many Olive-backed Thrushes foraging in trees, Red-eyed Vireos & Black-poll Warblers abundant in oaks, Bewick Wrens numerous and Thythons in family groups of 6 or 7 noisy, singing, came around owl calls.

PM. Went to cypress & oak steep slope of ridge across stream at 8:30. Last night woke up in middle of moonlit-night - Caprimulgids calling incessantly - decided were not whippoorwill. . . At about



## The 1942 Status of Wild Turkeys in Missouri

A. Starker Leopold<sup>1</sup> and Paul D. Dalke<sup>2</sup>

A recent inventory of wild turkeys in Missouri shows a population of 4,340 birds in 31 counties in the Ozark region. Their occurrence seems to be materially influenced by soil and topography, with the heaviest concentrations on shallow-soiled "balds" on Clarksville stony loam. Protection from hunting and other disturbance by man ranks high among the requirements for management. In general the native wild strain appears to be more productive than any of the hybrid game-farm strains.

THIS report presents the findings of a state-wide turkey inventory conducted jointly by the Missouri Conservation Commission and the Missouri Cooperative Wildlife Research Unit<sup>3</sup> between January 1 and April 15, 1942, for the purpose of obtaining more accurate and up-to-date information on the number and distribution of wild turkeys in the state than that provided by the Bennitt and Nagel game survey of 1934-1935 (1).

### METHODS

The basic principle involved in the census was to obtain estimates of *local* turkey populations from resident farmers, hunters, country store-keepers, and game protective officers. This method is applicable in Missouri because: (1) the turkey is a large and conspicuous game bird in which practically everyone takes an interest; (2) it habitually forms fairly stable winter flocks which localize their activities on well-defined winter territories; (3) its population density is rarely such as to cause confusion in identifying individual flocks; (4) the Ozark hill people live in practically every hollow and corner of the turkey range, and through their many activities have opportunity to know the local turkey flocks. Few other game species meet these specifications.

The field procedure in general followed that used by Mosby in Virginia (10), but involved more detailed cross-checking of individual flocks. An investigator first obtained from each local conservation agent all available information concerning the distribution of turkeys in the county, together with a list of reliable observers in each locality. Data regarding individual flocks were entered on county highway maps. Similar county-wide records were obtained from

forest rangers, refuge managers, and others with extensive knowledge of local game conditions. These initial steps often resulted in roughly locating half or more of the birds in a county. Then the more detailed field inventory began.

Interviews with residents of a given locality were pursued until each flock had been located and its size established by at least three individual reports, preferably obtained from observers on opposite sides of the flock territory. Often these figures agreed almost to a bird. When discrepancies occurred, the judgment of the investigator was used in determining the probable flock size. Sometimes eight or ten farmers had to be interviewed before a conclusion could be reached as to the number of turkeys in one small area. Many slight errors were undoubtedly made, but these would generally tend to compensate in a large area such as a county.

Some difficulty was experienced in getting certain individuals to tell freely what they knew. This was particularly true of the poaching fraternity, who were suspicious of close questioning on the subject of turkeys. A few offered deliberate untruths, but these were quickly detected by the system of cross-checking reports of each flock. In general, good cooperation was received from local people.

Before leaving a locality, the investigator recorded on the map the approximate range and number of birds for each flock. Areas where no turkeys were found were so marked or left blank.

A test was made of the accuracy of the inventory on a sample of 220 square miles around Carman Springs Refuge in northwestern Howell County. After the inventory of Howell County had been completed, a new refuge patrolman made an independent investigation of the local turkey population by means of field observation, interviews with *all* residents, track counts, gobbling counts (in April), and other available methods. Three months were devoted to censusing this area, previously covered in four days by the standard inventory method. Whereas

<sup>1</sup>Field biologist, Federal Aid to Wildlife Program, Missouri Conservation Commission, West Plains, Mo.

<sup>2</sup>Associate biologist, U. S. Fish and Wildlife Service, Missouri Cooperative Wildlife Research Unit, Columbia, Mo.

<sup>3</sup>Missouri Conservation Commission, American Wildlife Institute, University of Missouri, and U. S. Fish and Wildlife Service, cooperating.

the initial inventory showed 23 flocks totaling 142 birds, the much more careful second survey disclosed 26 flocks totaling 165 birds. This indicates an accuracy of 86 per cent in the first coverage, and is probably typical of the whole inventory. Since the figures which follow are based on the actual field data, they are undoubtedly conservative.

#### PRESENT TURKEY POPULATION

Table 1 compares the turkey population by counties in 1942 with that estimated by Bennitt and Nagel (1) in the winter of 1934-1935. The

TABLE 1.—COMPARISON BY COUNTIES OF THE 1942 AND 1934-35 INVENTORIES OF WILD TURKEYS

County	No. of flocks 1942	—No. of birds—	
		1942	1934-35
Taney	92	741	130
Ozark	74	569	320
Reynolds	34	326	100
Shannon	36	251	110
Howell	36	239	350
Dent	34	210	400
Texas	33	202	260
Carter	31	193	220
Phelps	21	185	50
Douglas	27	191	140
Oregon	28	172	65
Crawford	23	163	100
Barry	19	150	50
Stone	24	146	20
Ripley	12	78	90
Christian	15	77	10
Laclede	6	60	15
Iron	8	53	40
Wright	5	51	20
Mississippi	6	42	50
Madison	4	36	80
Wayne	5	34	130
Maries	3	31	20
Benton	4	24	20
Warren	2	22	25
Polk	1	19	
Camden	1	18	150
Pulaski	3	16	90
Butler	4	26	30
Washington	3	10	40
Gasconade	2	2	25
Bollinger			20
Cape Girardeau			15
Dunklin			60
Franklin			100
Hickory			10
Jefferson			10
Miller			20
Morgan			20
New Madrid			50
Osage			15
Pemiscot			10
Perry			30
St. Francois			10
St. Genevieve			50
Stoddard			15
Totals	596	4,340	3,585

present total of 4,340 birds shows approximately a 20 per cent increase over the 1935 figure of 3,585 birds. In terms of density, Leopold in 1931 (7) estimated an average density of 1.4 square miles per turkey, Bennitt and Nagel 2.8 square miles per bird over 9,907 square miles, and the present inventory 1.6 square miles per bird over approximately 7,000 square miles.

Originally the turkey range covered the entire state. Turkeys were apparently still abundant in parts of the northern counties until long after their settlement, as indicated by the report of Bogardus (3) that he and two others killed over 50 in three weeks on Shoal Creek in Clinton County, northwestern Missouri, in 1866. In northeastern Missouri there were turkeys in a few favored localities until 1895 and in one locality in Macon County until 1908. The last deer, on the other hand, disappeared from northeastern Missouri by 1882, 25 years before the last turkey. By about 1910, the turkey range had been reduced to the Ozark region and the southeastern lowlands, and in 1935 turkeys were found in only 45 of the 114 counties of the state. Today only 31 counties are known to contain turkeys, and of these only 17 contain more than 6 flocks each, although the total number of birds has increased slightly. It has taken a little less than 100 years to eliminate the turkey over 83 per cent of its original range in Missouri.

The present occupied range amounts to approximately 7,000 square miles in the Ozark region. Only one small remnant can now be found in the southeastern lowlands, and the encroachment of settlement and agriculture may ultimately eliminate the species from that region, thus further reducing the range.

Figure 1 shows the present locations of all flocks and their relative sizes. The 596 flocks recorded show the following distribution by size classes:

No. of birds	Per cent
1-5	38
6-10	41
11-15	17
16-20	4

Figure 2 presents the same data in terms of population density. Information concerning the three zones of density, that were recognized on the basis of number of birds per township, may be summarized as follows:

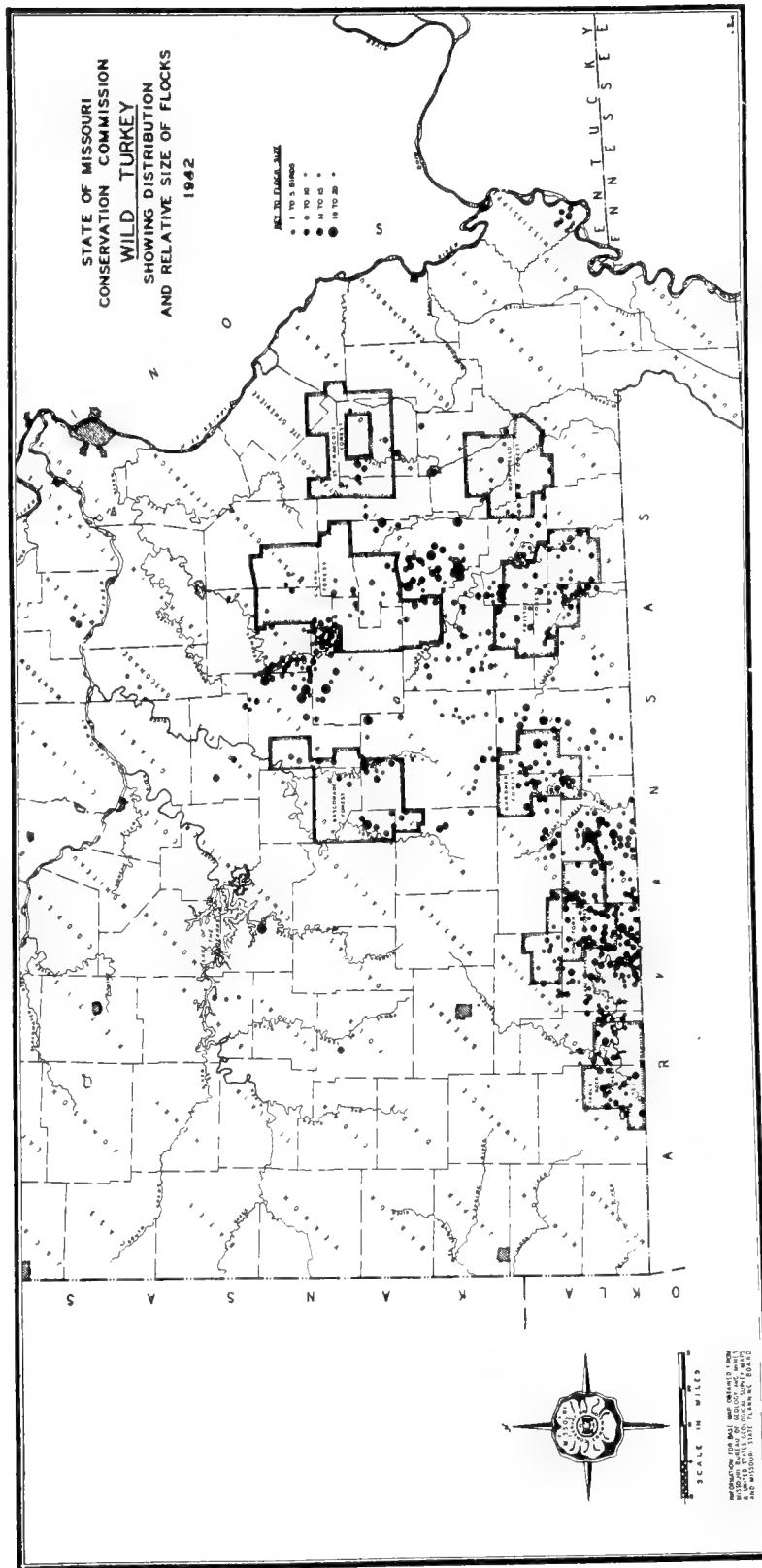
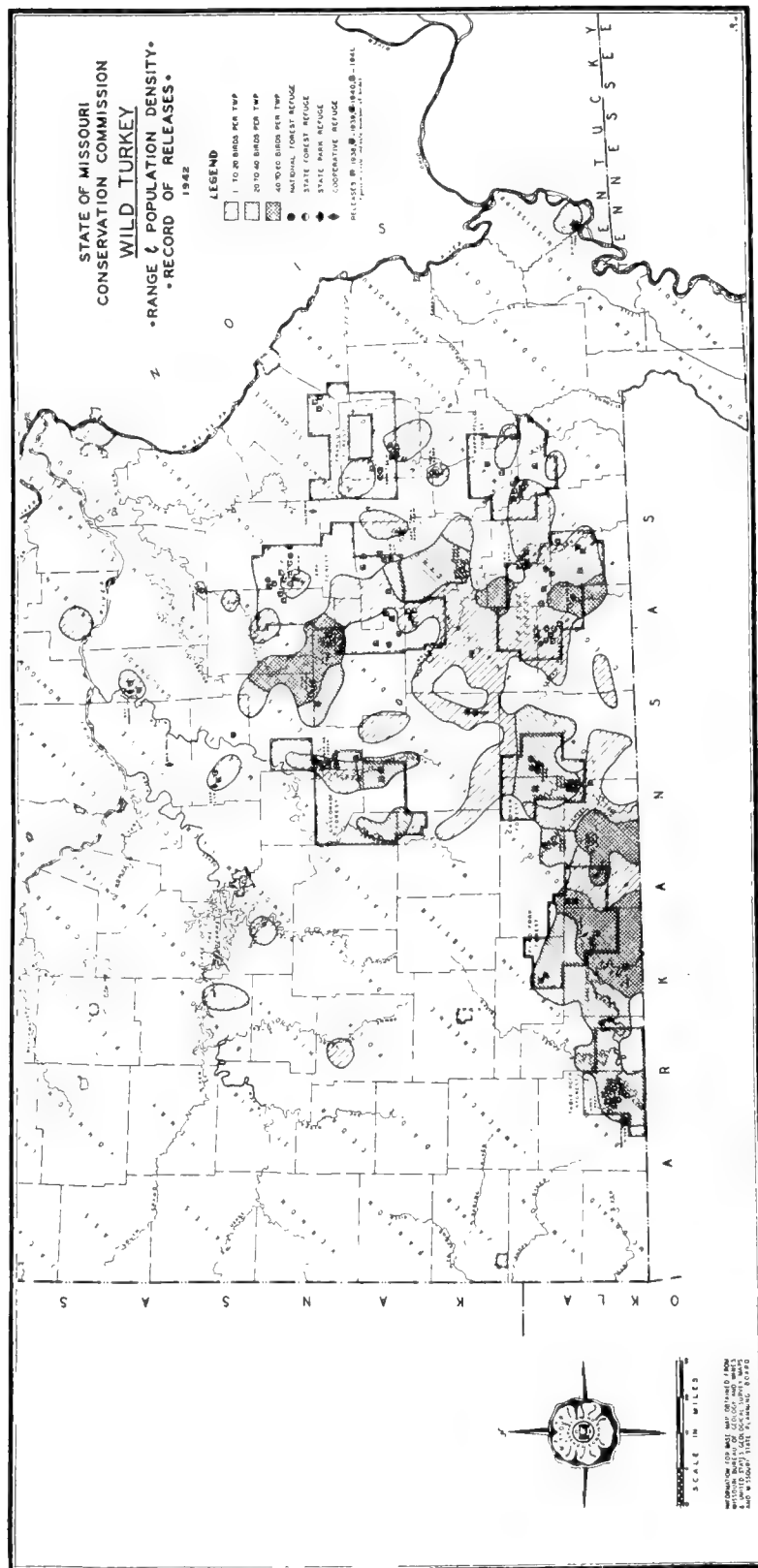


Fig. 1.—Distribution and relative size of turkey flocks, 1942.



No. of birds per township	—Area included—		—Flocks included—	
	Sq. miles	Per cent	Per cent	No. per township
1-20	4,130	59	34	1.6
20-40	1,750	25	32	3.8
40-60	1,120	16	34	5.9

The greatest concentration is in the southwestern portion of the range, particularly in Taney and Ozark Counties. Comparison with the 1935 estimates shows that there has been a decided increase of turkeys in this region, which has more than offset the shrinkage in range and number of birds in other parts of the state. The 20 per cent increase in the state total is largely due to the high densities recently attained in the southwestern counties. Additional smaller spots of local high density in the central and northern parts of the range are in most cases associated with successful refuges.

#### RELATION OF TURKEY DISTRIBUTION TO SOILS AND TOPOGRAPHY

Some interesting correlations may be noted between the present distribution of turkeys and the occurrence of certain soil types as classified by Miller and Krusekopf (9). A single soil type, the Clarksville stony loam, now supports 79 per cent of the turkeys in Missouri. This soil, of residual limestone origin, is characteristic of the very rugged and completely dissected parts of the Ozark Plateau, and only 40 per cent of it is farmed. A distinctive feature is the occurrence of "balds," or open-faced hillsides, whose shallow soils support only herbaceous vegetation with occasional scattered shrubs, patches of cedar, and scrubby post oak. The region of heaviest concentration of turkeys in the southwestern Ozark area conforms closely to the "bald" country of Clarksville stony loam. Extensive reaches of this same soil type in other parts of the Ozarks where balds are absent support, in general, lower turkey populations, with local concentrations only around certain refuges. This suggests some definite relationship between the occurrence of balds and the unusual abundance of turkeys in the southwestern Ozarks.

Another soil of the same series and similar origin, the Clarksville gravelly loam, supports 15 per cent of the turkeys, making a total of 94 per cent of the birds in the state that occur on the two Clarksville soils. The Clarksville gravelly loam, while steep and hilly in many places, contains more broad, shallow valleys and flat ridge tops, and therefore more tillable land.

Seventy per cent of this type is classed as being in farms. In general, turkey populations on this soil type are continuing to decline.

Ashe stony loam and Hanceville loam together support only 3 per cent of the turkeys. The Ashe stony loam, source material of which is the granite of the eastern Ozarks, is limited in extent but, like the Clarksville stony loam, is associated with very rough topography largely covered by mixed oak-hickory forest. Superficially, the areas of Ashe and Clarksville stony loam look very much alike, and the land-use patterns are similar; yet turkeys occur on the Ashe soil only as isolated islands in the lowest zone of density (1-20 birds per township), and the populations are apparently still declining. It appears, therefore, that rough topography and associated extensive forests are not as closely correlated with turkey distribution as the type of soil (inherent fertility being perhaps the deciding factor) and the character of the vegetation itself. On the basis of present turkey distribution and of recent trends in population densities it seems safe to predict that the area of Clarksville stony loam will continue to produce four-fifths or more of the turkeys in the state.

#### LAND USE AND AGRICULTURE IN RELATION TO TURKEY ENVIRONMENT

The extent and nature of human occupation of the Ozark area has had, of course, manifold effects upon the turkey population. Hunting and other direct influences will be mentioned later. The equally important indirect effects, particularly alterations in the environment, may be briefly considered here.

The agricultural economy of the region as a whole is characterized by overcultivation of thin soils and often steep fields, and by overgrazing of pastures and woodlands. This continuous abuse can result only in a steady decline in the productivity of the land for agricultural crops, livestock, and forest products, as well as wildlife. The adverse effects reach the turkeys most directly through overgrazing of the woodlands, which reduces both the variety and the total supply of turkey foods. This condition is further aggravated by recurring annual fires that sweep most of the Ozark woodlands each year (6).

Much of the area was originally open or savannah-like with a rich ground cover of grass and herbaceous vegetation. The combination of grazing, burning, and indiscriminate lumbering

has converted enormous areas into thickets of post oak or blackjack oak that make poor habitat for turkeys and other wildlife. An abundant native flora of legumes is one source of food that seems stimulated temporarily to increased production by ground fires, but this is probably more than offset by the heavy grazing. The extent to which this pattern of land use has reduced the carrying capacity of the region is difficult to estimate, but undoubtedly it has contributed much to the decline of the turkey population.

Two national forests, the Mark Twain and the Clark, were established in the Missouri Ozarks in 1933, and their programs of land acquisition and balanced land management will aid greatly in the ultimate restoration of suitable turkey habitat in the state. At present, two-thirds of the occupied turkey range is included within the boundaries of these two national forests, but since 40 per cent of their gross area is still in private ownership it is not yet possible to appraise the effects of the Forest Service program on the total turkey population within the state. As acquisition continues, however, more and more turkeys will range on national forest lands, where wildlife receives its logical place in land management and where improvements in turkey habitat are already noticeable.

With respect to fire control, the Forestry Section of the Conservation Commission is contributing much on lands not included in the national forest boundaries.

#### PROTECTION AND MANAGEMENT OF TURKEYS

**Legal protection.** The Missouri turkey season has been closed since 1937, and game-law enforcement has improved immeasurably since that date; yet illegal hunting continues to be the most important direct factor limiting turkey increases. Poaching is carried on more or less the year around by many Ozark natives and some village "sportsmen." Its most damaging form is the killing of "frying-sized" poults in the early fall. The low density of the turkey population in many areas is directly attributable to the heavy kill; thus protection still remains the first and most important step in management.

Sparse turkey populations often respond almost immediately to improved protection. This was demonstrated in the zone around the new Caney Mountain Refuge in Ozark County (8), where extensive patrolling and an enlightened

public attitude resulted in tripling the turkey population over a large area in two years, without any noticeable change in the environment. Many other spots with increased density of population are associated with improved protection.

**Refuges.** In Missouri the five types of turkey refuges now in operation are (1) state parks, (2) state forests, (3) federal refuges (U. S. Forest Service), (4) state refuges, and (5) private cooperative management areas. Some are highly successful, while others have failed in the production of turkeys. Practically all are successfully producing deer.

Table 2 lists the refuges concerned with turkeys, with pertinent data regarding each. The first five, all of which support a density on and surrounding the refuge of more than 40 turkeys per township, are considered very successful. Those with 20-40 birds per township are moderately successful, while those with less than 20 are definitely unsuccessful.

The success of a refuge seems to depend first of all on the location and nature of the area. Three of the five successful refuges are located in the southwestern "bald," or glade, country of Clarksville stony loam, while the least successful are mostly on granite soils in the eastern Ozarks.

The second factor in determining refuge success is the type of management, one of the most essential features of which is the exclusion of disturbance. Several potentially fine refuges have been rendered unproductive by excessive human activity. Public recreational developments on state parks, and activities of the Civilian Conservation Corps on many other areas, have driven out the wild turkey, which has a relatively low tolerance of disturbance and will not remain in the constant presence of man (4).

Refuge size, as such, is not necessarily important, since some of the smallest as well as the largest are among the most successful. However, small refuges in particular need freedom from internal disturbance and the cooperative assistance of neighboring residents.

The type of turkey with which each area is stocked appears to have an important bearing upon the productivity. To date the 6 most productive refuges are predominantly stocked with native birds of wild origin. The degree to which game-farm birds may repopulate potentially good turkey range is being further tested.

Private cooperative management areas may prove to be quite successful, particularly on nat-



urally good turkey range, since they offer a solution to the protection problem on private land. Such areas are relatively new in Missouri, and have not yet been fully tested, but the prospect on at least two of the four areas now set up is favorable. Where a fair remnant of native turkeys was already present, response to protection and management has been noticeable in two or three years. Cooperative management areas should be relatively large (at least 10,000 acres), since the danger of disturbance requires room for the turkeys to adjust their range within the protected zone.

**Liberations of game-farm turkeys.** Since 1925, approximately 13,000 turkeys raised on game farms have been liberated in Missouri, mostly on refuges or other protected areas. Some idea of the effect of these liberations may be obtained from Table 2, in which all known releases on refuges are listed in two columns. The first column shows releases from 1925 to 1937 of birds of rather questionable quality, mostly raised on the state parks; the second shows liberations from 1938 to 1941 of a much superior strain from a private game farm in Reynolds County. For a record of early attempts at turkey restocking in Missouri, reference is made to papers by Leopold (7), Bennitt and Nagel (1), and Blakey (2).

The 13 refuge areas that have been stocked received all told 6,468 artificially raised turkeys.

These refuges with their environs now support in the aggregate only 923 turkeys, and there were some wild birds on nearly all these areas at the outset. Heavy initial stocking neither assures nor precludes the success of a refuge; but management of wild remnants with little or no stocking has proven very successful on 3 refuges where it has been tried. There are so many influences involved in the success or failure of individual turkey refuges that it is extremely difficult to evaluate the effect of any single factor like restocking. However, current uncompleted studies indicate that the native wild strain, where it is established, is apparently more productive under Missouri Ozark conditions than any of the hybrid game-farm strains.

The present distribution of turkeys in the watershed of the Eleven Points River seems to illustrate the superior productivity of the native stock. Two large Forest Service refuges, Eleven Points and Wilderness, are located in the rough breaks of this river 10 miles apart in northeastern Oregon County. In soil, topography, and vegetation, these areas are much alike and their management plans are practically identical in that both offer grazing control, fire control, and protection. Both had remnants of native turkeys at the time of establishment. They differ only in that the Eleven Points Refuge has in recent years received repeated liberations of game-farm turkeys, whereas on the Wilderness Refuge the

TABLE 2.—TURKEY POPULATIONS ON STATE AND FEDERAL REFUGES IN RELATION TO PAST LIBERATIONS

Refuge	County	Acres	Year established	—No. of turkeys— released		1942 <sup>1</sup> inv.	Birds per twp.
				1925-37	1938-41		
Drury (4)	Taney	4,600	1939	None	None	191	57.3
Hercules (3)	Taney	5,500	1936	74	82	185	55.5
Indian Trail (2)	Dent	13,250	1924	972	80	159	47.7
Caney Mtn. (4)	Ozark	5,500	1940	None	None	140	42.0
Wilderness (3)	Oregon	12,800	1938	45	None	134	40.2
Carmen Spring (3)	Howell	5,000	1936	147	80	105	31.5
Deer Run (2)	Reynolds	8,380	1924	1316	None	101	30.3
Blue Spring (3)	Ozark	5,920	1936	100	119	72	21.6
Big Spring (1)	Carter	4,582	1924	856	35	41	12.3
Eleven Points (3)	Oregon	15,100	1935	50	75	40	12.0
Spring Creek (3)	Phelps	7,900	1940	None	167	37	11.1
Stoner (4)	Texas	12,250	1941	None	45	26	7.7
Low Gap (3)	Reynolds	9,500	1935	120	25	16	5.2
Sam Baker (1)	Wayne	5,150	1927	904	None	7	2.1
Meramec (1)	Franklin	7,172	1926	1176	None	None	None

(1) State park (3) U. S. Forest Service refuge  
(2) State forest (4) State refuge

<sup>1</sup>The 1942 inventory figures show the number of birds on standard-sized census areas of 120 square miles, within which each refuge or management area is centered.

native stock has been built up through protection, with virtually no mixing of hybrid birds. The present density is 12.0 turkeys per township on the Eleven Points area, and 40.2 on the Wilderness area.

Altogether 2,000 turkeys were liberated on or near the refuges from 1938 to 1941 inclusive. Of these, 14 per cent were on areas that in 1942 had 40-60 birds per township, 28 per cent on areas with 20-40 birds, 41 per cent on areas with 1-20 birds, and 17 per cent on range at present unoccupied. These data are not sufficient to prove that liberation of game-farm turkeys has not contributed to the turkey restoration program in Missouri, nor that it cannot contribute something in the future. Yet the inference can be drawn that restocking, even in conjunction with management practices, has so far yielded very limited results. Recent experience has shown that the native wild turkey can be successfully managed and is probably more productive and better adapted to Ozark conditions than game-farm strains.

Therefore current plans for turkey management in Missouri will not go amiss if stress is placed on protection and management of the native stock still extant. Future releases should continue to be made on an experimental basis only, under conditions of good management, and with a careful record of the results. Live trapping and redistribution of native birds, a technique used successfully in Texas (5) and other states, but not yet adequately tested in Missouri, may be a practical procedure for restocking unoccupied parts of the range.

#### SUMMARY

A census of Missouri turkeys shows a slight increase in numbers but a decrease in occupied range during the past decade. The heaviest populations occur on lime soils with frequent "balds," the lowest on granitic soils.

Overgrazing, overburning, slashing, and poaching are believed accountable for the decline of the species. Relief from poaching has produced prompt local gains.

Remnants of native stock have responded much better to refuges than plantings of game-farm birds. Refuges must be free of disturbance to be effective.

#### LITERATURE CITED

1. Bennitt, R. and W. O. Nagel. 1937. A survey of the resident game and furbearers of Missouri. Univ. of Missouri Studies, Vol. XII, No. 2.
2. Blakey, H. L. 1937. The wild turkey on the Missouri Ozark range. U. S. D. A. Biological Survey, Wildlife Research and Management Leaflet BS-77.
3. Bogardus, A. H. 1874. Field, cover, and trap shooting. J. B. Ford and Co., New York.
4. Dalke, Paul D. 1940. Turkeys need seclusion. Mo. Conservationist 3: 3.
5. Goodrum, P. D. 1941. Capture of wild turkeys in Texas for restocking. Pittman-Robertson Quarterly, Vol. I, No. 3.
6. Hammar, C. H. and R. H. Westveld (editors). 1937. Forest restoration in Missouri. Mo. Agric. Expt. Sta. Bul. 392.
7. Leopold, A. 1931. Report on a game survey of the north central states. Sporting Arms and Ammunition Mfrs. Institute.
8. Leopold, A. S. 1941. Report on the management of the Caney Mountain Turkey Refuge. Mo. Conservation Comn., mimeo. report.
9. Miller, M. F. and H. H. Krusekopf. 1929. The soils of Missouri. Mo. Agric. Expt. Sta. Bul. 264.
10. Mosby, Henry S. 1941. The wild turkey in Virginia. Pittman-Robertson Quarterly. Vol. I, No. 1, pp. 1-13.

Marshall 1944

7.

## General Acct

May 12 Gainesville, Ozark Co., Mo.

8:30 they started to call. I gave imitation and a great Chuck-wills Widow immediately lit on stub 4' from ground about 4 yds ahead of us, looked at us, then hovered with body motionless & wings beating str. up & down extreme range for several seconds then to a tree & started to call. Now dusk. Call: grint willow or willow. Of the 3 accent, the 1<sup>st</sup> is lightest, 2<sup>nd</sup> medium, 3<sup>rd</sup> greatest. Upon imitating the call which is helped by a slight vocal note mixed with the whistle, the bird apparently a ♂, & territoriality "outraged" made ~~etc~~ low grunts like hog. Was seen flying over trees several times. When dark, shined 3 birds with flash. Deep amber shine. They were <sup>30-75</sup> 100 yds from each other. Upon arriving upon the ~~of~~ terr. of the 1<sup>st</sup> (upon returning) he came close called (they do call in flight), perched nearby. & gave imitations, then he made some loud



Marshall 1944

8.

## General Unit

May 12 Gainesville, Ozark Co. Mo.

clapping sounds and a rapid series of the hoarse grunts. Sounded like a bear crashing thru the trees. Call resembles that of Whip poor will, grunt corresponds to "gump" of poorwill. Several seconds separate each song. The birds are abundant and closely spaced.

May 13 Elsie & I went out to Leopold's cabin at Caney Nat. refuge, the area Leopold bought up for Turkey refuge for Mo. Cons. Comm. That Leopold & wife Betty & son, Fritz. Sat on porch of cabin on N. slope on 50' cliff over stream looking across broad stream valley to wooded slope on other side. All the warblers & vireos in the country seemed to be drifting past the porch - following the edge of the bank in foraging: Black & White, Black-Poll, Pileolated, etc. Hiked up stream & up to bald exposures of limestone on S-facing ridges with sparse bunch grass



Marshall 1944

4.

## General Acct

May 13 James Carey Int. Refuge, Ozark Co., Mo.  
& wild flowers) where Prairie  
Warblers & Field sparrows. The  
field sparrows occurred throughout  
the area wherever the trees  
got far enough apart - usually  
as a "bald" is approached.  
Flushed a pair of Chuck-wills  
from near fallen log - <sup>they</sup> kept returning  
to it and would call in  
broad daylight. The bird  
when flushed sits very still  
at L on branch <sup>of</sup> with  
head tilted slightly upward.  
♂ once seen before flushed ~~perched~~  
squatting horiz on a stump near  
the fallen log. We couldn't  
find the nest. Saw a grey checked Thrush.  
P.M. - Severe Thunder storm & cloud burst.  
Elsie & I at dusk hiked  
up to near Chuckwill's nest. Shined  
the birds. Called Barred Owls  
& returned almost to camp ( $\frac{3}{4}$  mi  
back when Barred Owls answered  
(where we had been calling). I called  
again, and in 10 min they were in  
trees near us giving all sort of groans,  
barks, howls, etc. except whistle of occidentalis.





Marshall 1944

10.

General Acct.

May 13 Caney Mt Refuge, Clark Co. Mo.

basic call: -----

2 birds both calling together  
saw one in high dead tree on horiz  
branch. Good shine. Upright posture.

Only 2 Chuck-wills heard  
this evening. Could find no  
screech owls.

May 14 Stam & I got up at  
5 am try to see turkeys.  
2 Chuckwills still calling in  
light. Went up to large bald  
& heard 2 turkeys above cabin  
(to south), one north in canyon.  
Shot Black-Poll Warbler edge bald.  
Cuckoos, summer tanagers, Wood  
Thrushes in woods. Multitude  
of bds. singing in early clear cold sun.  
Went down across fields & stream  
valley again - flushed a ♀ turkey  
from field. She got up, flew vigorously  
and steadily rose with rapid beats  
then set wings in a bow & sailed  
out over woods to west canyon.  
gobblers gobbling about every 5-10-15  
min. from bald above cabin where  
we went & tried to attract him  
with hen call frail scratching against



Marshall 1944

11.

General Acct.

May 14 Caney Mt. Refuge (Clark Co., Mo.  
whetstone - nail in wooden case)  
but failed. He was gobbling  
well into hot part of day.

Skinks everywhere & very tame.  
Also scorpions & one beautiful  
Colored Lizard in bald.

Prairie Warblers in <sup>open</sup> oaks  
around balds, vireos, <sup>Wood</sup> Thrushes,  
least flycatchers, bobwhites  
in woods above cabin.

1 pr. Phoebes on bald another  
n. at cabin - nest with  
3 young ready to leave built  
under overhanging cliff. Yellow throats  
& white-eyed & Red-eyed vireos  
common. Starker heard Ruffed Grouse.

May 15 <sup>Guinerville</sup> Called up flock jays and 3 or 4  
cuckoos in cypress gulch on  
hill by varied owl calls. No  
response to Screech Owl notes.

PM Went after Chuck-wills. The  
usual 3 along face of cypress  
slope, chased them on up to  
summit where I shined several  
as they sat on fence post &  
called & chased each other  
around.



Marshall 1944

12

## General Acct

May 16 or 15<sup>th</sup>? Gainesville, Oak Co. Mo.

Hiked along edge stream valley  
& through sparse woods.

Woods: Myiarchus, Pewees, Summer  
Tanagers, Titmice, regularly spaced

Also a pr. Baltimore Orioles

1 pr. Downy 1 pr. Hairy,  
3 pr Red-headed woodpeckers, etc.

Saw 1<sup>st</sup> & heard thyothous from  
bare tree & brush patches singing.

On way back saw & watched  
for some time a magnificent  
pair of huge Pileated Wood-  
peckers. We calling occasionally.

Were very tame - flew close to  
us. Foraged along low horiz.

branches large trees or near  
base of other trees. Each  
flap of wings make loud sharp  
noise. Same tree with n. Hairy.

May 16 PM Went to Mt. Home, Baxter Co., Ark.

May 20 Collected up a Valley w  
town similar to Refuge.

Large sycamores at mouth & fields  
& pastures, farther up smaller  
fields and balds on hills.

Nighthawks foraged 2 or more ft  
from end of balds &



Marshall ~~1944~~ 1944

13.

General Acct.

May 20 Gainesville, Ozark Co. Mo.

Chuckwills were always found (around edges <sup>topped calling when dark.</sup> of fields).  
Had bad luck with both.

1 Chuckwill would lead me along - flying in circles thru woods low over ground giving hoarse grunts in rapid succession. Then start calling farther away. No owls on

way back but Olive-backed Thrushes heard in sky. <sup>2 Chuckwills had calling spell late at night no moon. stopped when reached there.</sup>  
Birds few in this stream

valley. After passed sycamores with their woodpeckers, were only 3 pr. Summer Tanagers, 1 pr Bluebird, 2 pr ♂ Indigo Buntings, 1 Pileated Woodpecker Titmouse, ~~couple more~~.

May 21 afternoon - bds. coll in rain.

P.M. Went to top ridge across bridge from town - On cypress slope called up Chuckwill - successfully - they give the grunts rapidly & flap around 1 ft above ground all thru their territory - around and around you but very hard to see in gloom. Cull from low stumps & low branches.





Marshall 1944

14.

## General Acct

May 21 Guineville, Ozark Co., Mo.

shot the ♀ which I saw  
move up to a low twig in  
area where ♂ was calling &  
circling. ♂ attracted  
readily by imitated calls but too  
close to shoot. Went up  
to ridge & along road where  
greater numbers - all grunting  
& calling could hear about  
6 or 7 at once. Shot ♂ from  
10' stub in opening of woods.  
Sighted another bird that kept  
up grunts as if bothered near nest.

When seen before dark  
these birds fly with deep, measured  
beats just above tops trees. Wings  
extremely long which gives butterfly-  
like effect. Sait a little with wings  
over back esp when going around  
over ground. Perch on twigs  
crosswise.

May 22 No owls on <sup>highest</sup> ridges to west.  
Many chuck-wills calling and two  
Whippoorwills at dusk edge large  
cald used for pasture. Whips' call close  
together as fast as possible. Chucks  
several seconds apart. Saw only 2 night hawks



Marshall 1944

15

## General Unit

Gainesville, Izank Co., Mo.

Type of country - / stream thru town  
in a valley  $\frac{1}{4}$  mi wide in places  
with farms & pastures - wide enough  
for a few birds of open co. like H-w Swallow,  
Mocker, Grackle, Red-headed Woodpecker, Crow,  
Starling, etc. Ridges above this

with systems of narrow valleys  
and streams between ridge  
systems. They are ~~very~~ impenetrable

slope. meanders with some oval  
pastures thus cut off on alternate  
sides. This is type co. at Loney Mt.

Refuge and Valley W Gainesville

Slopes gentle & heavily wooded  
with various oaks. When steep, high  
have cypresses on S or SW facing  
slopes. On E facing ridges are the balds.

List of Birds:

Broad valley thru town:

Green Heron 2

Killdeer 2

Mourning Dove many

~~Red-bellied Woodpecker~~ Red-headed Woodpecker 4

Phoebe 2

Rough-winged Swallow 2

Martin 3 or 4

Swift 150+

Blue Jay 6 or 7

Mocker 1 or 2

Catbird, Thrasher

Robin in town

English Sparrow

Starling, Grackle

Orchard Oriole, Cowbird



Marshall 1944

16

## General Acct

Jamiesville, Ozark Co., Mo.

Birds Characteristic of the Ozark Woods

Vulture several

Red-tail 2

Short-tail Hawk? (black & white tip of tail) Woodthrush deepest woods



Bobwhite 1 fl. 5, 1 pair

Turkey 4

Yellow-bellied Cuckoo pairs  
common in dense woods.

Barned Owl 2

Chick-will's Widows 24 +

Whippoorwill 2

Nighthawk (balds)

Swift occasional pairs thru woods

Hummer 2

Stream Valley

Pileated Wdpr. 5 Stream Valley

Red-bellied " 2 stream Valley

Hairy " 2 pr.

Downy " 2 pr.

Crested Flycatcher pers. common thru forest

Empidonax lighter woods; least-wooded gulches

Chocche 1 pr. on a bald, 1 on stream

Peewee thru lighter woods.

Jay - sm flocks.

Chickadee heavy woods. uncommon

Titmouse most abundant &

(over) evenly spaced & most monstrous call

Beard When uncommon

Cardinal " "

Olive-backed Thr. migs.

Gray-ch Thr "

Bluebird<sup>2</sup> - some meadows

Gratcatcher abundant wood balds

lighter woods.

White-eyed Vireo - dense gulches

Yellow thr " streams

Blue hd. " migs.

Red-eyed " Common woods

Bl. & Wh. Warbler migs.

Tennessee W migs.

Purple W. migs?

Myrtle W. "

Black-poll W - migs

Prairie W. common wood balds.

in trees

(in open)

Chat dense wet brush

Stream valleys

Pileated Wd migs.

Redstart migs?

Summer Tanager Woods.

Cardinal Woods

str. things

calling

goldfinch edge valleys  
chipping - valleys & around <sup>large</sup> balds  
Field Sparrow In and for of distance  
around balds spreading into sparse

Marshall 1944

Acc. 7240 #89946-89960

Catalog

Carlisle, Cumberland Co., Pa

June 4

(red eyed)

2729

♂ Vireo

Boiling Springs, Cumberland Co., Pa

July 9

2730

♂ Spinus tristis amer goldfinch

Carlisle, Cumberland Co., Pa

July 9

2731

♂ Agelaius Melothrus ater

Miss. R 4 mi E New Orleans, Jeff Parish, La.

Aug 15

2732

♂ Stelgidopteryx <sup>ruficollis</sup> ~~serripes~~

[Plauche] Camp Plauche, 6 mi E New Orleans Jeff P., La.

Aug 15

skel 2733

Thryothorus ludovicianus skel

Bonnet Carré Spillway, St Chas. P., La.

Aug 31

2734

♂ in Dendroica dominica (dycaenora)

Sept 1

2735

♂ ad Parus stricepellus

2736

ad Vireo griseus

2737

♂ in Protonotaria citrea

2738

ad Wilsonia citrina

7 mi W New Orleans, Jeff. P., La

Sept 10

2739

♂

Stem. ~~truncatus~~

2740

♀

Dryobates pubescens

2741

♂ in

Dendroica fusca (Blackburnian)

2742

♂ in

Sayornis motacilla

2743

♀ in

Wilsonia citrina









Marshall, J. T., Jr.

Marshall Islands, Marianas  
Islands (Saipan, Tinian, and  
Guam), and Palau Islands

November, 1944 - December, 1945

Catalog

Sight records

Species accounts



Marshall, J. T., Jr.

Marshall Islands, Marianas Islands (Saipan, Tinian, Guam), and Palau Islands

November, 1944 - December, 1945

file Bob Stebbins 7 March 80  
Kevin Marx borrowed the herps  
and never returned them

### Contents

Catalog of specimens  
Sight Records of Birds  
Species Accounts



*Catalog of Specimens*





None of the rodents got to MVZ - already at USNM. Some skeletons of birds and 3 alcoholics still to be sent

Marshall, 1944 to MVZ. (25 x 45 mm) Catalog

Eniwetok Atoll, Marshall Is.

Presented to Wm Brown of Berkeley Nov 8 unnamed Id NW Eniwetok Id.  
[2744] ♀ in Anous minutus fat very small coll Wm Brown  
√2745 ♀ little Id. 5. end Eniwetok Id. basal 1/3 bill blue, rest black iris black, nails black, feet blue-gr. web white

Nov 10 Japtan Id. colors same as above  
√2746 ♂ Gygis alba fat 1 testis 7mm at testis 3mm  
•2747 ♂ " " some fat 1 testis 5mm  
alc 2748 Ennecees Japtan Id.

Nov 11 5-10 ft high in tree  
little Id 5 Japtan nests of plant material  
√2749 ♂ Anous minutus testes 7mm ft brown nesting  
[Birds of Eniwetok Atoll: Black-naped tern, Fairy Tern, Noddy Tern, Little Noddy, Ruddy turnstone, Wandering Tattler, Golden Plover]  
12.5-19.5  
Tutu Saipan Id, Marienau Id.

Filariasis  
no intestinal parasites  
√2750 ♀ Zosterops conspurcator iris amber, feet lead color  
√2751 ♂ Alcedo viridis no intestinal parasites insects in stom. iris dark purplish, bill dusky, feet brownish  
√2752 ♂ in Streptopelia bitorquata no intestinal parasites iris dark insects in stom. iris very small  
√2753 ♂ ad Dore forquata testes 15 mm iris light, bill dark brown, feet black much fat

Dec 6 long beetles in stom  
√2754 ♂ Halcyon chloris albicilla no intestinal parasites testes 7.5 mm  
2755 ♂ Gecko nocturnal lizard age 6.5-24.5

Dec 7  
\*2756 alc in Myzomela cardinalis  
•2757 ♂ in plant pollen? insects no parasites  
√2758 ♂ ad insects " no parasites cloacal glands present  
11.7-29.4 FA 258 Aponis setoparicito.

alc  
\*2760 in Flycatcher Rhipidura rufifrons 11.5-25.1 FA 213 Dec 8



Marshall 1944  
Catalog

2

9.9-26.7

Surjan, Marianas Ids

FA 219

Dec 8

- ✓2761 ♂ ad *Myzomela cardinalis* testes 8 mm.  
✓2762 ♀ im *Zosterops conspicillata saipani* fat ovary small iris grayish  
✓2763 ♂ im " fat testes 1 mm. " "  
✓2764 ♂ ad " fat testes 1 mm. " "

FA 259 12.6-29.8

- ✓2765 ♂ *Gallinula* Rail some fat bill & ft. pinkish-green testes 4.5 mm.  
2766 ♀ " Rail not fat testes 1 mm. ova 1 mm.

6.3-19.0 FA 147

- ✓2767 ♂ *Trochylus sinensis* bill pink, upp. mand. black, lower base yellow, iris yellow testes 7 mm.  
✓2768 ♂ *Egretta intermedia* testes 4 mm. grasshoppers, 1 dragonfly nymph in stom.

iris cream, bill yellow, tip upper mand & feet black.

13.7-26.7 FA 232 Dec 24

- ✓2769 ♀ *Collocalia inexpectata* seeds & fruit oviduct large  
✓2770 ♂ *Cleptornis marchei* testes very small  
✓2771 ♀ ad *Collocalia inexpectata* bill & ft orange ova small

18.0-32.5 FA 282 Dec 26

- ✓2772 ♀ *Aplonis opacus guami* same plumage as #2759 ovary small.  
✓2773 ♀ ad *Aplonis opacus guami* iris yellow, bill & ft black, bottom ft white  
oviduct large, beginning brood patch, ovum 4 mm

9.9-26.7 FA 219 Dec 27 7 *Zosterops* blood slides only.

10.7-26.7 im " " ova 1 mm 2 January 1945

2774 ♂ *Rattus rattus* 360-180-37-20

12.6-30.3 FA 259 January 7 1945

- ✓2775 ♀ *Heteroscelus inornatus* ft dull greenish-yellow  
✓2776 ♂ *Ptilinopus roseicapiti* testes very large fruit in stom. (ft dusky-purple)  
✓2777 ♂ " " testes very large " iris & eye-ring light (greenish) yellow  
✓2778 ♂ *Galligolumba xanthocephala* testes very large bill dusky, iris dark  
fat fruit in stomach ft very dark pink

7 *Zosterops* taken 27 Dec 44 TA 219, Sanyo

#1	♂ im	<i>filaria communis</i>	haemoproctus - 1
#2	♀ laying		" light
#3	♀ im		" medium
#4	im	none	none
#5	♀ ad		haemoproctus heavy
#6	♂ im		" light
#7	♂ im		" heavy

Marshall, 1945

3.

# Catalog

APO

to PM San Francisco Saipan, Marianas

- 11.5-23.3 TA 205 8 January
- 2779 ♀ in *Cleptornis puer* ant. beetles, seeds bill golden brown  
yellow *interles* pulp, ovary small feet yellow
- ✓ 2780 ♂ in *Rhipidura rufifrons* testes 1 mm. { upper mand black  
flycatcher insect singing { lower mand " at tip, grey  
feet light brownish
- 2781 ♂ ad " testes 5 mm. insects
- ✓ 2782 ♀ ad *Myzomela cardinalis* insects brood patch laying bill black, feet &  
base l. mand. brown

This follows report of 15 Jan 45 and now using  
new map: Marine Div Ed of Oct 44

- 11.3-20.8 17 Jan 45
- ✓ 2783 ♀ im *Zosterops* fat ovary small iris light tan, bill black, base of lower mand  
conspicuously saipani and ft lead color. stom. parts of grasshopper, seeds, a dripe-  
very hard pit 4 mm diam.
- ✓ 2784 ♂ *Phaethon lepturus* iris dark brown, bill lime-yellow  
testes 10 mm squid beaks (12) in stom. feet black, tarsi & base toes pearl

- 11.6-22.2 17 Jan 45
- 2785 ♂ *Pteropus mariannus* Flying fox wing spread 39 3/4" 41" 250--55-27

- 9.9-26.7 17 Jan 45
- ✓ 2786 ♂ ad *Zosterops* testes 4.5 cloacal glands present fat fruit, pulp, large pits 4.5 mm.
- ✓ 2787 ♂ ad " " " " " " " fat "
- ✓ 2788 ♂ ad " " " " " " " fat "
- ✓ 2789 ♂ im " "amber" 2.5 " "absent" all: bill black, base l. mand " fat  
grey
- ✓ 2790 ♀ im " "amber 1.5 mm ova blueish grey " fat
- ✓ 2791 im " "grey feet lead color pads below" fat
- ✓ 2792 ♀ im " "siber ovary small grey. " "
- ✓ 2793 ♀ im " "grey ova 1 mm old? brood patch " "
- ✓ 2794 ♀ im " " " ovary very small " "
- ✓ 2795 ♀ *Halcyon chloris* ova 2.5 mm. 4 Cerambycid beetles (large)  
iris purple, bill & ft black, bottom ft grey 2 mand pink ventrally
- ✓ 2796 I-♂ in *Aplonis* rt testis? black, tough, l. ovary small? Fruit  
Hermaphrodite? iris yellow, jaw yellow bill & ft black base l. mand & bottom grey

- 10.2-19.5 21 Jan 45
- ✓ 2797 ♀ ad *Rhipidura rufifrons* ova 1 mm. insects
- ✓ 2798 ♀? im *Myzomela cardinalis* hymenoptera, spider bill black, base l. mand & l. jaw yellow  
pulp. ft green, yellow on bottom



4.

, 10.2-19.5 Saipan, Marianas

culmen brownish on top, light  
violet orange, testes 4 mm.  
2 ants.

- all: <sup>fruit</sup> berries with hard pit 4 mm. diam. are main part of diet
- " " " insects, beetle ova 1 mm
- " " "

27 January 38<sup>u</sup>s pred

- 2806 ♂ ad Flying Fox *Pteropus marginatus* very fat skunk odor 255--54-27

1 February 45 sternum very small  
total length  $8\frac{1}{2}$ "

- Tongue  
 2807 ♀ in "Acrocephalus" vs "Thrasher" feet grey, iris light brown, bill dark brown above, olive below, pink at base  
 2808 ♂ ad "Thrasher" testes 7 mm

Stomachs: 2807: 1 small entire Gecko, 1 land snail  
parts of insects incl Coccinelidae

2808: Insect parts: hemiptera, beetles,  
spiders, 2 land shells.

3 February 45

- ✓2809 ♀ 12.5-27.8 3 February 45  
Halcyon chloris albicilla large Polistes wasp  
ova 1.5 mm. several " grasshoppers  
3 large spiders

4 February 45

- skeleton 13.5-26.5 4 February 45  
• 2810 ♂ in ~~Thrush~~ <sup>Acrocephalus</sup> testes 6 mm. 6 mm. land snails 4 mm.  
1 Vespid wasp (large)  
several Curculionid (Deretiosus)  
beetles 8 mm.

11.8 - 25.2

- ✓ 2811. Ad Rhipidura rufifrons testes 7mm. small insect parts.

Cleptornis marchei

- ✓ 2812 *Cleptornis marchei* 11.3 - 20.8  
"Wagler" testes 6 mm. cloacal glands. 2 berries 2 ants  
(11 complete) 1 moth

tape worm ✓ 2813 ♀ ad <sup>(skull complete)</sup> Collocalia inexpectatus ovary small

- ✓ 2814 ♂ im " " tests " ) numbers see back

2813 Sm. Beetles (Small <sup>4 others</sup> ones)  
 2 Mylabridae  
 10 Histeridae (Phelistor?, 1 Alraia)  
 Several Calandriniae  
 " Nitididae  
 1 Mordelidae (Mordellistena?)  
 E Numerous ants  
 Diptera  
 1 Aradidae (bug) lives on tree

2814 Beetles:  
 25 Specimens of beetles Histeridae (Phel)  
 5 Calandriniae  
 1 Aphodiinae  
 Several Nitidulidae  
 Misc beetle parts  
 Others  
 1 Black bug  
 many ants  
 1 small hymenopteran



Marshall, 1945

5.

Catalog  
Saipan, Marianas

5.7-18.1

7 February

- ✓2815 ♀ ad *Hirundo rustica* <sup>ovary minute fat</sup> remains inc 4 Gallipherid flies and 1 Pentatomid bug. <sup>finely ground insect</sup>

11.5-23.3

- ✓2816 ♀ ad *Ptilinopus roseicapilla* <sup>small figs? in stom.</sup>  
✓2817 ♂ *Halcyon chloris albicilla* <sup>very fat, oviduct large, ovum 4mm.</sup> testes 4mm. 1 large complete arboreal grasshopper <sup>part of another</sup>

5.7-18.1

8 February

- ✓2818 ♂ ad *Acrocephalus* <sup>"Theraps"</sup> testes 6.5mm. <sup>other misc. insect parts</sup> 1 pentatomid, 1 caterpillar, 1 scarab beetle 15mm.

11.3-19.6

9 February

- ✓2819 ♀ ad *Myzomela cardinalis* <sup>3 snails, 1 spider, 1 hymenopteran, mix insect parts</sup> oviduct lg. <sup>old? brood patch</sup> some fat  
✓2820 ♂ im *Warbler* *Cleptornis marchei* testes 2.5mm. <sup>berries, seeds, 1 beetle (Curculionid)</sup>  
✓2821 ♂ im " " 3mm. <sup>4 berries, 1 spider (Attidae), 1 tenelionid beetle, 1 arboreal hymenopteran</sup>  
✓2822 ♀ im *Gallinolumba xanthoura* <sup>ova 3mm</sup> seeds & berries  
✓2823 ♂ im *Aplonis opacus guami* <sup>(10-19.8) testes small dark</sup> berries only

13.7-26.2

13 Feb 45

- ✓2824 ♂ ad *Aplonis opacus guami* testes 11mm. <sup>1 Vespid wasp (Polistes) large seeds.</sup>  
✓2825 ♂ im *Acrocephalus* <sup>"Theraps"</sup> testes 7mm. <sup>3 snails, Curculionid beetles, bones saved of 2 sm. lizard. Bird humors?</sup>

16.7-30.0

15 Feb 45

- ✓2826 ♂ skull thin *Pluvialis dominica* testes 4mm. insects

16 Feb 45

- ✓2827 ♂ *Halcyon chloris albicilla* testes 4mm. <sup>lg. grasshopper</sup>  
✓2828 ♂ *Phaethon lepturus* <sup>testes 9mm. pickup</sup> <sup>squid beak - large</sup>  
✓2829 ♂ *Pluvialis dominica* <sup>skull thin</sup> testes 3mm. <sup>fat grey, bill blackish</sup> <sup>lg. grasshopper</sup>

Tinian APO# Marianas

20 March 45

- ✓2830 ♂ im *Monarcha takatsukasae* <sup>sm insect parts</sup> testes very large, cloacal glands <sup>bill & ft. light blue</sup> iris dark purple-brown  
✓2831 ♂ ad " " <sup>testes 9mm. cloacal glands</sup> " " " " " " " "  
✓2832 ♀ ad " " <sup>ova 1.5mm. oviduct large</sup> <sup>old brood patch</sup> " " " " " " " "  
✓2833 ♂ im " " <sup>testes 1.5mm. sm. insect parts</sup> <sup>upper mand black, yellow at base</sup> " " " " <sup>lower mand yellow</sup> <sup>black spot ant 1/3rd</sup> feet light blue

Monarcha takatsukasae

Tinian

Marshall, 1945

6.

Catalog

Tinian ~~GPO~~ #

Marianas

20 March

alc  
2834

Typhlops

21 March

alc  
2835

Typhlops

22 March

- ✓2836 ♂ ad Rhipidura rufifrons <sup>small insects</sup> testes large <sup>white around nostril</sup> bill whitish at base  
✓2837 ♂ im " " " <sup>small insects</sup> " small " <sup>yellow</sup> " "  
✓2838 ♀ Monarcha takatsukae <sup>bill & ft blue, upper mand black tip, then gray border</sup> brood patch, laying, sm. insects  
✓2839 ♂ im Aplonis testes small fruit in stomach

27 March

- ✓2840 ♂ <sup>testes small</sup> Halcyon <sup>ft black above, orange (dull) below</sup> iris dark brown, bill black, pink below except tip <sup>grasshoppers</sup>  
✓2841 ♀ ad Zosterops <sup>brood patch, oviduct & ova small fat</sup> iris brownish-orange <sup>bill dusky above</sup> <sup>olive-gray below</sup>  
✓2842 ♂ ad " " <sup>cloacal glands, brood patch?</sup> " " " <sup>gray basally</sup> " <sup>testes 5 mm</sup> " fat  
✓2843 ♀ ad " <sup>brood patch</sup> " fat " <sup>ovary small</sup> " "

28 March

- 2844 ♂ im Pteropus sepiolans <sup>200-100-24-14</sup> one mite found  
✓2845 ♂ ad Monarcha testes very large bill ft blue insects  
✓2846 ♀ ad Halcyon ova small <sup>ovary large: adult</sup> oviduct prominent <sup>grasshoppers</sup>  
✓2847 ♂ " testes 8 mm "  
✓2848 ♂ " testes 6 mm "

1 April

- 2849 ♂ Pteropus marianus copulating 253-54-25 <sup>spr. 39"</sup>  
2850 ♀ " " " 253-54-28 <sup>spr. 38 1/2"</sup>  
skeleton 2851 ♀ " " " <sup>sperm present, no embryo</sup> <sup>spr. 40 1/4"</sup> 255-50-25 " " no sperm  
2852 ♀ " tokudae 200-47-26 " " <sup>spr. 33 1/2"</sup>  
✓2853 ♀ ad Aplonis opacus ova 2 mm fat <sup>iris yellow</sup> fruit oviduct large  
✓2854 ♀ ad " " <sup>ovary large</sup> fat iris yellow  
✓2855 ♀ ad Rhipidura rufifrons brood patch



Marshall, 1945

8.

APC#  
Catalog  
Tinian Marianas  
9 April

- 2879 ♂ ad Rattus exulans 244-122-25-17 Id Command  
2880 ♂ ad Mus musculus 153-76-18-12

10 April  
Nyroca fuligula probably ♀

~~2881~~

Greater Scaup pickup lost, same plumage as 2908  
oversmall ova 1 mm

- proteus L ✓ 2882 ♀ im Zosterops berries iris light tan, bill black above, olive-grey below, ft dark grey  
✓ 2883 ♂ im " insects " " " testes 4 mm " " "  
✓ 2884 ♀ im " " " " " ova 1 mm " " "  
proteus M ✓ 2885 ♂ ad? " berries " " " testes 4 mm " " "  
✓ 2886 ♀ ad " " + seeds " " " ova small " " "

11 April

- 2887 ♂ im Rattus r. fugivorus 305-162-34-20 testes <sup>4st</sup> descende  
✓ 2888 ♂ ad Rhipidura testes 5 mm insects cloacal glands present  
✓ 2889 ♂ ad Myzomela testes 6 mm " " "  
✓ 2890 ♂ im Gallinolumba xanthoura feet purplish-brown seeds bill dark brown testes 13 mm  
✓ 2891 ♀ ad Aplonis opacus ovum 5 mm berries iris yellow  
ovary small small insects  
✓ 2892 ♀ im Monarcha bill black at tip, yellowish at base, feet blue-grey  
skeleton  
• 2893 ♂ ad " testes 5 mm insects bill " " "  
✓ 2894 ♀ im " insects ovary small, bill black above, yellowish at base lower " " "  
✓ 2895 ♂ ad " testes large insects bill " " "  
2896 ♀ Rattus r. fugivorus 300-160-33-19

12 April

- ✓ 2897 ♂ ad Rhipidura insects, mandible whitish at base testes large  
✓ 2898 ♀ ad " " " " " " ova small  
✓ 2899 ♀ im " " " yellowish " " " 1.5 mm  
✓ 2900 ♂ ad Ptilinopus testes 11 mm figs & berries pinkish on top, greenish on sides iris lemon, bill greenish-olive, feet dark, yellowish below  
✓ 2901 ♂ ad Aplonis testes 12 mm cloacal glands iris yellow fruit  
✓ 2902 ♂ ad " " 7 mm " "absent" " "



Marshall, 1945

9.

QPO #CatalogTinian Marianas12 April

- ✓2903 ♂ ad Aplonis testes 11 mm. fruit (papaya) iris yellow cloacal glands  
 ✓2904 ♂ ad " " 12 " " " " "  
 ✓2905 ♀ ad " ovum 4 mm oviduct large " " "  
 ✓2906 ♀ ad " " 2 mm " " " " some fat  
 ✓2907 ♀ ad " " 25 mm <sup>laying</sup> fruit " " " "

13 April

- ✓2908 ♀ Nyroca fuligula bill light blue-grey, black at tip ova small  
~~Scaph Duck~~ iris yellow feet greenish-grey  
 fat stomach: green material & crushed snail shells

14 April

- ✓2909 ♂ Halcyon lower mand pink testes 7 mm. large grasshoppers.  
 ✓2910 ♂ " " " " " "  
 ✓2911 ♀ " " " " ova 1.7 mm "  
 ✓2912 ♂ ad Zosterops testes 5 mm. cloacal glands bill black, ft dark grey berries  
 iris tan lower mand grey at base  
 ✓2913 ♂ ad Rhipidura basal mand blue-grey cloacal glands. sm insects testes 7 mm  
 ✓2914 ♂ ad " " " " " " 5 mm " "  
 ✓2915 ♀ ad " " " " brownish ova small insects  
 ✓2916 ♂ im " " " " yellowish testes 3 mm "  
 ✓2917 ♀ im " " " " " " ovary small " "  
 ✓2918 ♂ im Monarcha bill black above, black & yellow below insects feet lead grey testes 2  
 ✓2919 ♂ im " " " " " " " " " "

QPO #SaipanMarianas17 April

- ✓2920 ♂ im Zosterops fat sm. insects & seeds testes 4 mm. lower mand dark  
 iris light brown; ft. lead grey; upper mand dusky (not black); greenish  
 ✓2921 ♀ im " fat " " " " ovary small " " " "  
 ✓2922 ♂ im " fat " " " " " " " " " "  
 ✓2923 ♀ im " fat " " " " " " " " " "

# Birds of Timor

Brown-headed Booby

Frigate Bird

Noddy Tern

Fairy Tern

Golden Plover ✓

Wandering Tattler ✓

White Heron

Night Heron ✓

Bittern

Mallard

Teal

Bluebill ✓

Gallinule ✓

Rail?

Swiftlet

Kingfisher

Chinese Dove

Fruit Dove

Ground Dove

Starling

Monarch

Flycatcher

Honeyeater

White-eye

Barn Swallow ✓

Domestic Pigeon ✓



Marshall 1945

10.

Catalog  
Saipan, Mariana

20 April 45

- ✓2924 ♂ ad *Zosterops* testis 4 mm cloacal glands fruit, sm insects fat <sup>head</sup> grey <sup>bill dusky, iris light</sup> <sup>base of</sup> <sup>reddish brown</sup>  
✓2925 ♂ ad " " " " " seeds cloacal gland fat " "  
✓2926 ♀ im <sup>small</sup> <sup>window</sup> " brood patch over 1+ mm fruit very fat " "  
✓2927 ♂ ad " testes 4 mm, cloacal glands, fruit, small insects, fat " <sup>dark blue</sup> <sup>grey</sup> "  
✓2928 ♀ im " ovary small sm insects fat " <sup>dark blue</sup> <sup>grey</sup> "  
✓2929 ♀ ad " oviduct med. over 1 mm " " fruit " <sup>dark blue</sup> <sup>grey</sup> "  
✓2930 ♀ ad *Rhipidura* virgin, crop full of insects ft brown <sup>not to do,)</sup> <sup>bill black</sup> <sup>dark</sup> "  
✓2931 ♀ ad? " brood patch over small " " " <sup>dark</sup> <sup>grey</sup> "  
✓2932 ♂ im " testes 5 mm " " " " "  
✓2933 ♀ ad *Cleptornis* brood patch over 1.5 mm fruit <sup>bill</sup> <sup>dark</sup> <sup>orange</sup> "  
✓2934 ♂ im *Myzomela* testes minute sm beetles, <sup>not</sup> <sup>detected</sup> <sup>in</sup> <sup>stomach</sup> <sup>fat</sup> <sup>grey</sup> "  
✓2935 ♀ im " ovary small " " " fat " "

2936 ♂ *Mus musculus* testes 1.5 mm 167-80-18-13

21 April

- 2937 ♂ im *Rattus r. alexandrinus* testes internal 213-104-28-16  
2938 ♂ ad *Mus musculus* testes descended 163-77-17-12  
✓2939 ♂ im *Pluvialis* stom empty, very fat testes 4.5 mm  
✓2940 ♂ <sup>not detected</sup> <sup>but I think</sup> " insect " " " "  
✓2941 ♀ im " shells & glass little (hard) fat over 2 mm.  
✓2942 ♀ *Halcyon* stom empty, over 2 mm oviduct slightly enlarged

24 April

- ✓2943 ♂ ad *Gallicolumba* testes 12 mm <sup>feeding in Papaya tree</sup> <sup>bill blue-black, skin on face grey-blue,</sup> <sup>beak purple (dull), iris dark brown</sup> <sup>Papaya seeds & pulp, sm whole fruits</sup>

25 April

2944 ♂ ad *Rattus exulans* 265-141-26-16

28 April

- 2945 ♀ ad *Rattus norvegicus* 415-192-40-19 Tanapag Harbor  
2946 ♀ im " " 351-163-38-17 " "



Marshall, 1945

11.

Catalog

Capo #

Saipan, Marianas

28 April

2947 ♀ im Rattus norvegicus 335-163-38-16  
2948 ♂ juv " " 190-80-27-12

30 April

2949 ♂ Rattus rattus 1 May 395-205-40-19  
2950 ♂ " " 391-206-36-20

2 May

2951 ♂ " " 213-95-30-14 <sup>mites</sup>

3 May

2952 ♂ " " 314-160-35-19

2953 ♂ " " 373-197-38-20

9 May

2954 ♂ " " 361-184-38-21

10 May

2955 ♀ " exulans 8 tits 248-132-25-17

2956 ♂ " rattus 398-202-40-21

12 May

2957 ♀ " " 10 tits 420-255-39-22

2958 ♂ " " 380-200-38-19

18 May

2959 ♂ " norvegicus 416-200-41-18

19 May

2960 ♂ " long tail! rattus norvegicus 359-177-38-20

17 May

alc 2961 Skink Eumeces

alc 2962 Gecko Gecko

alc 2963 Toad Bufo

alc 2964 Large lizard Varanus

December 44



Marshall, 1945

12

Catalog

Guam, APC # 1, Marianas

26 May

iris yellow

- ✓2965 ♀ in Aplonis In bush berries ova small " " 80 g.  
 ✓2966 ♂ ad " " insert, cloacal gl. pres., testes 12 mm 85 g.  
 ✓2967 ♂ Halcyon bill black above pink below ft brown, yellow below testes 5 mm. 60 g.  
 ✓2968 ♀ in Collocalia } ova small .6 mm 6.1 g  
 ✓2969 ♂ im " } pair testes 3 mm.

27 May

- ✓2970 juv Rhipidura cloacal tubules present 8.0 g.  
 ✓2971 ♂ ad " testes 7 mm <sup>sm</sup> insects 9.0 g.  
 ✓2972 ♀ ad " ova small insects 7.2 g.  
 ✓2973 ♀ im " ova 1 mm " 8.6 g.  
 ✓2974 ♂ ad " testes 6 mm <sup>sm</sup> insects 8.1 g.  
 ✓2975 ♀ ad Myiagra } small insects ova small 11.5 g.  
 ✓2976 ♂ ad " } " " bill & ft. blue-black testes 2 mm 12.8 g.  
 ✓2977 ♂ ad " " " testes 3.5 mm color as above 12.1 g.  
 ✓2978 ♀ Halcyon bill black above, pink below 1 lg. annelid ft. pinkish below, dusky above ova 2 mm 59.9 g.  
 ✓2979 ♀ juv " bill black, extreme tip white; ft blueish above, <sup>pink</sup> white below 62.5 g.  
 ✓2980 ♂ ad Aplonis testes 15 mm In Bush fruit iris y 85.0 g.  
 ✓2981 ♀ im " oviduct visible ova 1.5 mm Papaya fruit " " 80 g.  
 ✓2982 ♂ im " testes 9 mm " " " " 89 g.

29 May

- ✓2983 ♂ ad Zosterops cloacal tubules testes very large ft olive pads yellow 1 large caterpillar bill orange below olive above iris dull white 10.0 g.  
 ✓2984 ♂ im " testes 7 mm cl. tubules " dull " " " " " " " " 8.8 g.  
 ✓2985 ♀ ad old broad patch " ova 1.3 mm " " " " " " " " " " 9.2 g.  
 ✓2986 ♀ ad old broad patch " ova 1.6 mm fat " " " " " " " " " " 8.9 g.  
 ✓2987 ♂ im fruit " cloacal glands " orange " " " " " " " " 9.9 g.  
 ✓2988 ♂ im testes 1 mm " " " " " " " " " " 9.8 g.  
 ✓2989 ♂ ad Myiagra small insects bill, ft, eye blue-black l. mand lighter blue. 12.8 g.

111



Marshall, 1945

13

Catalog  
Guam, ~~ARO~~ <sup>1</sup> Marianas  
29 May

- ✓2990 ♂ im Rhipidura basal mand yellowish testes 2mm <sup>small insects</sup> 9.5g.  
✓2991 ♂ im (older) " cloacal glands " " dusky " 6 " " 8.5g.  
✓2992 ♂ im " " " " " pinkish " 5 " " 8.9g.  
• 2993 ♂ Corvus testes small queen ant, grasshoppers, etc 262.5g.  
✓2994 ♂ ad Gallinolumba testes 13mm. fruit 141.7g.  
✓2996 ♂ Haleyon testes 5mm underside ft dull orange 2 scales, sm insects 63.9g.

- 30 May
- ✓2997 ♂ im Zosterops testes 6mm sm insects fat iris dull white bill & ft <sup>olive</sup> dusky above, yellow below, ft olive 8.7g.  
✓2998 ♀ ad brood patch " on saddle " " " brownish " " 11.0g.  
✓2999 ♀ im ovary small " fruit " " " <sup>antler</sup> " " 9.1g.  
• 3000 ♀ ad Myiagra iris very dark laying, sm. insects bill & ft blue-black; base l. mand blue-grey 13.1g.  
✓3001 ♀ ad brood patch " on saddle " " " " " " " 11.0g.  
✓3002 ♂ ad cloacal glands testes 8mm " " " " " " " 11.6g.  
✓3003 ♂ ad Rhipidura testes 6mm cloacal glands sm. insects iris dark, bill black, base l. mand grey ft brown 8.6g.  
✓3004 ♂ ad cl. glands " sm insects " " " " " " " 8.3g.  
✓3005 ♂ ad testes lg. " " " " " " " " " 8.3g.  
✓3006 ♂ ad Ptilinopus testes 11mm fruit below, pads olive iris <sup>yellow</sup> cream, bill olive-green, ft olive above lead 112.9g.  
✓3007 ♂ ad Corvus iris dark, bill & ft black, pads <sup>dull</sup> yellowish testes 2mm. 257.7g.  
✓3008 ♀ Rallus orotoni cloacal glands iris dull red, bill & ft brown, u.m. black <sup>small 2 land slugs in stom</sup> 205.4g.  
✓3009 ♂ ad Myiagra testes 7mm iris dull red, bill & ft blue-black, l. mand blue sm. insects 11.9g.

- 31 May
- ✓3010 ♂ testes 5mm Anous stolidus bill black, ft brown sm squid beaks? 197.7g.  
✓3011 ♂ testes 10mm Gallinolumba fruit & seeds ft dark violet, bill blue-black 132.9g.  
✓3012 ♂ testes 9mm Ptilinopus fruit bill olive-gr, iris light yellow, ft purple above 92.6g.  
✓3013 ♂ testes 4.2mm Haleyon insects iris dark brown, bill bl. above, pink below, ft dusky, below dull orange 63.3g.  
✓3014 ♂ testes 3.5mm " " " " " " " 59.0g.  
✓3015 ♀ ovary 1.5mm " " " " " " " 59.2g.





44

Guam, Marianas

pads dull orange

- ✓3024 ♀    one small, no fat    1 June    Phaeopus grasshoppers  
Numenius    ft gray, bill blackish, lighter base l. mand    342.6g.

2 June

✓3025 ♀?	im	Zosterops	iris light tan	"	upper mand.	fat	pulp & seeds	9.5g.
✓3026 ♂ ad	"	"	fat " " "	"	lower mand.	l. mand orange	"	8.9g.
					cloacal glands		testes 7 mm.	

- 3 June  
 ✓ 3037 ♂ ad Zosterops iris amber <sup>putp</sup> testes 7mm cloacal glands. orange below 10.0g.  
 lg. green caterpillars  
 ✓ 3038 ♀ im " " creamy ovary sm. " " 9.6g.  
 testes 7mm. cloacal glands, sm. insects (stom very small in all mss?)  
 ✓ 3039 ♂ ad Myzomela iris dk brown, bill & ft black, pads yellowish 14.7g.



15

Guam, Marinas

ova small <sup>2 fruit</sup> veg. pulp, buds & flowers

Saved  
evenings

- 238.09.

testes 7 mm sm. fish

- 513.59

ft blue-(pearl) grey, iris dk brown  
bill brown & pink

- 506.0g  
mint

Saipan, Marianas

30 June

- 3050 ♂ in Rattus rattus 279-143-33-18

20 July

- 8.4 g

Lake Suway, Saijan

26 Sept

4 gambusia(?) fresh ova undeveloped

- 55.59

ora about 1-1.5 mm, oviduct is visible <sup>fish-bones</sup> in stomach

All further specimens are USNM unless

marked "MUZ". They include an ectoparasite vial and stomach vial in most cases.



Marshall, 1945

## Catalog

USNM

Collections

16

Lake Susupe, Sarjan

26 Sept

3054 ♀ *Sterna albifrons* ova undeveloped 55.5g.

bill, eye black; ft brownish-olive 4 gambrusia? fish

3055 ♀ *Gygis alba* bill black at tip base blue; eye black 97.6g.  
fish-bones. oviduct invisible  
ft blueish-grey, claws black, web white. Ova 1.5 mm

27 Sep

Complete skeleton MVZ

3056 ♀ *Varanus*ova 8 mm  
stomach: 3 eggs; Intestine 1 egg & bones  
→ All eggs of *Varanus*

bill, eye, ft black; pads yellowish

3057 ♂ ad *Myzomela cardinalis* cloacal glands large, testes 7 mm. 14.1g.3058 ♀ im " " bill eye blackish, ft dark grey  
gape & pads yellow. 10.8g.3059 ♂ im *Aerocephalus luscini* iris light tan, bill & ft as below testes 5 mm. 34.0g.3060 ♂ im " " iris light, bill black above, horn below  
feet lead, pads olive testes 1.5 mm. 32.7g.3061 ♂ *Haleyon chloris* iris brown. bill black above, pink below  
ft blackish, soles flesh color testes 8 mm. 81.5g.3062 ♂ *Pluvialis dominica* iris dark, feet lead, bill black  
testes 4 mm. 120g.

28 Sep

3063 ♂ *Pteropus mariannus* testes descended in a scrotum iris dark brown stomach empty Spread: 43 inches  
270---68-25 forearm: 151 641g.3064 ♂ *Gallinula chloropus* testes 7 mm. iris reddish brown, with indistinct dusky ring near pupil  
bill greenish-yellow at tip, base red; ft yellow-green 295g.3065 ♀ " " iris reddish-brown; bill yellow at tip, rest red  
feet light greenish-yellow. Thigh reddish. ova 2-3 mm 271g.

29 Sept

3066 ♂ *Mesophoxys intermedia* testes 5.5 g. mm. iris cream, bill yellow  
tip upper mand black feet black. 472g.

30 Sept

3067 ♂ im *Myzomela cardinalis* some fat. bill & ft black, underside ft olive-yellow  
iris dark brown cloacal glands. 15g.3068 ♂ ad *Aerocephalus luscini* bill dark olive-dusky above, flesh below  
ft lead color, iris light olive-brown testes 6 mm. cloacal glands 33g.

3069 ♂ im " " colors same as above orbital nematodes in eyelids 35g.

3070 ♂ im " " testes 8 mm. colors same as above, except iris  
pure light brown cloacal tubules 35g.3071 ♂ im " " testes 8 mm. colors same as 3068  
cloacal tubules 37g.3072 ♀ *Gallinula chloropus* iris purplish?; bill yellow tip, rest red  
ft yellow-green, thigh red 321g.3073 ♂ *Iobrychus sinensis* testes 8 mm. iris lemon, midline of bill blackish  
darker at tip, rest flesh color  
ft dull yellowish green very pale middle of tarsus pink 114g.

1 Oct

etc MVZ

3074 *Varanus*

919 9  
Dark  
violet  
all brown  
25  
Testes  
bill  
ft: dark  
olive-green, under  
scales & to mouth dusky  
& dusky

Marshall, 1945

USNM

17

Catalog

Collections

Lake Susupe, Saipan

2 Oct

- iris dark brown, bill olive-green & dusky; ft dull salmon, webs & nails  
dusky. fat 919g.
- 3075 ♂ Anas onstaleti Testes 25 mm  
ovum 1 mm. skin greenish yellow, bill dull yellow, black at tip
- 3076 ♀ Mesophoxys intermedia ft black, iris cream. 357g.
- nd 3077 ♀ Gallinula chloropus bill olive & brown, ft greenish-olive  
iris brownish-grey with dusky ring near pupil. 246g.
- 3078 ♀ ovum small " " colors same as 3077 260g.

3 Oct

- 3077 ♀ virgin - ova minute  
medium fat ft. dull salmon, webs & nails darker  
iris dk. brown; bill light dusky with some greenish-grey 816g.

2163.

1163.

1163.

1163.



Marshall, 1945

Duplicate Copy

U.S. National Museum  
Collections

Catalog  
Tinian Island, Marianas

7 October

- \*  
3078 ♂ im *Zosterops* iris light reddish-brown, grey away from pupil, upper mand. black, l. mand. blueish-grey, darkens at tip; ft lead grey, pads olive. skull mostly double, some fat, testes 3mm.  
3079 ♂ im " colors same, iris greyer skull entirely single some fat " 1.5"  
3080 ♂ im " " " back of skull double some fat " .5"  
3081 ♂ ad " " " all double, little fat " .4"  
3082 im " " " iris greyer skull all single some fat  
3083 ♀ ad " " " sides l. mand. slightly olive skull all double, beginning brood patch fat 1.5mm

8 October

- iris lt. reddish-brown, bill dusky above, l. mand. blueish-olive darkens at tip  
3084 ♂ im " ft blueish-grey dark little fat, back skull double testes 2.5mm 6.8g.  
3085 ♂ ad " colors same as 3084 brood patch moderately developed, some fat, testes 4mm 7.9g.  
3086 ♂ im " bill yellow (sides and ventral) at base, iris drab light brown entire skull single some fat testes 1mm. 7.6g.

9 October

- little fat, moderate brood patch, testes 4mm 7.1g.  
3087 ♂ ad " iris tan, ft lead grey, pads olive; bill blackish above, blueish-grey below  
3088 ♀ im " ova small, appears virgin, front of cranium single, mod. fat 8.5g.  
3089 ♂ im " colors same as 3087 but base bill yellowish some fat 7.3g.

10 October

- \*  
3090 ♂ im " ft lead blueish-grey, pads olive skull almost entirely double testes 5mm. some fat, cloacal tubules 7.6g.  
3091 ♂ ad " iris rich reddish brown " 4mm " " " 7.4g.  
3092 ♂ im *Monarcha* ft blue 1mm window ant cranium testes 7mm cloacal tubules 12.3g.  
3093 ♀ ad " u.m. black at tip brood patch oviduct large ovum 1.5mm. 12.4g.  
3094 ♂ im " iris dark brown 2mm windows in back skull testes 6mm. cloacal tubules 12.4g.  
3095 ♂ im " colors same except bill; ant half blackish post " orange-yellow skull almost all single testes 0.7mm. 10.8g.

3096 ♂ ad *Rattus rattus rufescens* 364-194-40-20

3097 ♂ " " " 339-179-38-20

11 October

MVZ alcoholic

- 3098 ♂ *Pteropus* fat iris dk brown  
3099 ♀ " embryo MVZ " " " " 250-51-23  
3100 ♀ " " " " " " 250-52-26

found by 10 Oct  
iris color  
to dull  
brown in  
hours after  
for all  
iris rich  
reddish-brown  
change with  
time



Marshall, 1845

19

# Catalog

Linian, Marianas Islands

11 October

- |      |   |                            |                 |               |
|------|---|----------------------------|-----------------|---------------|
| 3101 | ♂ | <u>Pteropus</u>            | iris dark brown | 243-49-24     |
| 3102 | ♂ | "                          | " " "           | 250-52-27     |
| 3103 | ♂ | "                          | " " "           | 260-52-27     |
| 3104 | ♂ | "                          | " " "           | 250-53-26     |
| 3105 | ♂ | "                          | " " "           | 258-53-26     |
| 3106 | ♂ | <u>Mus musculus</u>        |                 | 168-81-18-13  |
| 3107 | ♀ | "                          | "               | 163-80-18-12  |
| 3108 | ♂ | <u>Rattus r. rufescens</u> |                 | 320-164-33-20 |
| 3109 | ♂ | "                          | " "             | 323-173-36-19 |
| 3110 | ♀ | "                          | " "             | 271-137-33-18 |

12 October (Lake Hagoi)  
 taken with ♂ - both emaciated probably blown in by recent typhoon  
 3111 ♀ Spatula <sup>clypeus</sup> ~~rhynchotis~~ <sup>ova small</sup> iris dull greyish-brown, ft dull golden tan, nails &  
 iris dk brown ft greenish, thighs red, with yellow ring below the red.  
 3112 ♀ Gallinula ova sm. bill yellow at tip, red at base  
 ft greenish yellow skull thin  
 3113 ♀ Lim lapobrychus ovary & ova sm - virgin very fat.

13 October

- iris dk. brown, ft & bill lead blue  
 3114 ♀ ad Monarcha ova sm. very fat 12.5 g.  
 skin around eye yellow skull thick colors same  
 3115 ♀ ad Dolichopus ova small, ovary lg. not virgin as below  
 iris yellow, ft dull pale yellow, bill flesh color, blackish above, ft greener.  
 3116 ♂ ad " skull thick testes 10 mm

15 Oct (S.S. Francis A. Wardwell, Trinidad, Barb.)

- 3117 ♀ Rattus rattus rattus 417-222-35-25  
alc MVZ (11.0.1)

alc MVZ

alc 1402  
3118 Bufo (14 Oct)

(Marpo):

- 3118 Info (17 Oct) iris brown, ft lead grey, base l. mand olive grey windows in skull  
3119 ♂ im Zosterops " very fat, testes 3 mm. 8.1g.  
3120 ♂ im " " " " " " yellow skull all single  
testes small, fat, 7.2g.  
3121 ♀ im " " " " " " flesh-color skull all single  
ovary small, fat 7.8g.  
3122 ♀ ad Monarche iris dk. purplish brown, ft blue, bill blue, tip on black midline  
skull almost all single 11.2g.  
3123 ♂ im " " " " " " bill blackish, yellow at base testes sm. 13.7g  
skull all single  
3124 ♀ im " " " " " " " " " " ovary small 12.6g  
skel MVZ  
3125 ♀ ad Halcyon Marpo ad plumage - worn vividly visible, ovary small



Duplicate Catalog

Linian Marianas Islands

16 October

- MUZ skel  
• 3126 ♀ in Monarcha bill black terminal half; base um blue. base l m olive  
ovary small  
MUZ skel  
• 3127 ♂ in Aplonis im. plumage testes small  
3128 ♂ Rattus r. rufescens 351-192-38-19 no ectopar. Iscom  
3129 ♀ ad Rhipidura bill light at extreme base ovary small  
3130 ♂ Haleyon (15 Oct) bill black, back half of l m pink, iris dk brown,  
testes 3 mm. ft dusky, yellowish pads.  
3131 ♂ im Aplonis jaw yellow, iris yellow, mostly single skull  
testes very small, base l mand light grey  
3132 ♀? in " iris yellow, base l m light grey skull all single, very fat  
MUZ alc  
\* 3133 Monarcha blue bill & ft.

18 October (Lake Hagoi)

- 18 October (Lake Hagoi)
- 3134 ♂ Gallinula iris brown, bill scarlet, tip greenish-y, ft. gr-y, thighs & testes  
no fat 10 mm  
Testes 8 mm  
with a few red dots  
Thighs yellowish )
- 3135 ♂ " " " " " " " " " " "
- 3136 ♂ Haleyon (Int Lasso) testes 4 mm.
- 3137 ♀ Aplonis " " brood patch iris y ova 2 mm (Lasso)
- 3138 ♂ " " " " testes 9 mm "
- 3139 Ad " cloacal tubule " " " y " "
- 3140 ♀ " " " " ova sm, oviduct visible

19 October (kargo)

- |      |   |               |           |                  |               |
|------|---|---------------|-----------|------------------|---------------|
| 3141 | ♀ | <u>Rattus</u> | <u>s.</u> | <u>rufescens</u> | 414-221-39-22 |
| 3142 | ♂ | "             | "         | "                | 342-189-37-20 |

23 October (Mango)

- |      |      |                  |                      |   |                                   |
|------|------|------------------|----------------------|---|-----------------------------------|
| 3143 | ♂ im | <u>Hirundo</u>   | gonads sm, very fat, | skull mostly single                       | 16.8g.                            |
| 3144 | ♂ im | "                | " " " "              | 2 small windows                           | 17.5g.                            |
| 3145 | ♀ im | "                | " " " "              | skull 1/2 single                          | 19.2g.                            |
| 3146 | ♂    | <u>Myzomela</u>  |                      |   | 15.0g.                            |
| 3147 | ♀ ad | <u>Rhipidura</u> |                      |   | 8.7g.                             |
| 3148 | ♀ ad | "                |                      |   | 8.6g.                             |
| 3149 | ♂ ad | <u>Monarcha</u>  | cloacal glands       | } pair - nest<br>+ 2 eggs<br>coll REG #40 | testes 9mm<br>bill blue<br>13.5g. |
| 3150 | ♀ ad | "                | full brood patch     |   | l spot over<br>2mm<br>13.0g.      |



Marshall, 1945

Duplicate.

21

Catalog

Timian Island, Marianas

23 October

- |      |      |                  |                |                        |                        |       |
|------|------|------------------|----------------|------------------------|------------------------|-------|
| 3151 | ♀    | <u>Halcyon</u>   | ova small      | testes 4 mm            | iris brown             |       |
| 3152 | ♂ ad | <u>Zosterops</u> | "singing" fat  | base l. mand grey      | " " " live-grey.       | 8.1g. |
| 3153 | ♂ ad | "                | testes 4.5 mm. | iris: inner ring brown | outer ring light grey. | 8.4g. |

25 October (Mars)

- |      |      |                     |  |              |        |
|------|------|---------------------|--|--------------|--------|
| 3154 | ♂ im | <u>Hirundo</u>      | very fat, gonads small   | windows      | 20.6g. |
| 3155 | ♂ im | "                   | " " " "  | sm. "        | 18.4g. |
| 3156 | ♀ im | "                   | " " " "  | " "          | 16.6g. |
| 3157 | im   | "                   | " " " "  | " "          | 18.2g. |
| 3158 | ♂ im | "                   | " " " "  | very large " | 16.4g. |
| 3159 | ♂ im | "                   | " " " "  | " "          | 17.6g. |
| 3160 | ♂ im | "                   | <del>no fat</del> " " skull entirely single  |              | 13.9g. |
| 3161 | ♂    | <u>Streptopelia</u> | testes small, ft. brownish-pink, bill dusky, iris dull cream, skull all granulated |              |        |
| 3162 | ♂    | "                   | (24 October) testes 15 mm.   | " " "        |        |

26 October (Marpo Valley)

- 3163 ♂ Rattus exulans? testes not descended 283-153-34-18  
 3164 ♂ Rattus s. rufescens " " " 383-216-38-20  
 3165 ♂ " " " " " " 335-185-37-18  
 3166 ♂ " " " " " " 371-203-39-20  
 3167 ♂ " " " testes descended 402-205-37-21  
 3168 ♀ " " " 360-195-36-20  
 3169 ♀ Halcyon ova sm - post-breeding gonads  
 3170 ♂ Ptilinopus skin around eye olive, bill olive-green, iris pale yellow, ft: pads pale dull orange, scales of dorsal surface dark pink, sides dusky, very fat, testes 11 mm.  
 3171 ♂ Gallicolumba very fat testes 12 mm. grey ft dull violet, bill black, iris dark, skin around eye  
 3172 ♂ " colors same as 3171 some fat testes 11 mm.  
 3173 ♂ " " " " 2 sm. windows top skull. very fat " 12 "





Catalog  
Peklin, Palans  
1 Nov

Tree Toad  
" "

Koror, Palau  
3 Nov

3176 ♂ Lizard

3177 ♀ Caprimulgus indicus <sup>eyes 4 mm</sup> <sup>dark</sup> <sup>20 mm long</sup> ovum 1.5 mm. 10 beetles long.

3178 ♂ Otus podarginus testis 4 mm. <sup>huge grasshopper</sup> several 3m", 1 centipede

422

3179 *Ad Zosterops cinerea* stom: plant material bill: <sup>dark</sup> dark grey testes 4 mm  
iris brown ft bluish grey

3180 ♀ ad " " stem - plant ovary  
cm

3181 ♂ ad *Myzomela* <sup>stone</sup> <sup>insects</sup> iris brown testis 7 mm  
iris dk brown bill & ft black

3182 ♀ im Duwala Iris dk brown bill + t black "nuts" 1 in stom  
2 sm windows 3 23 mm diam 2 in intest ovary sm.

5 Nov

3183 ♂ Lizard

3184 ♂ "

3185 ♂ Coluricincla stom: insect parts  
testes 6 mm. iris dk. brown

3186 ♀ ad " ft grey bill dk. brown  
ova sm. insect 7. kerat " " "

3187 ♂ ad " test. 2mm. " " " " fruit " " "

3188 Prim " Ova sm " " " " " " "

3189 ♀ im. " " " " " " " " " "

3190 ♂ in Collocalia. - testes small! sm insects

✓ MVZ 3191 ♂ im

3192 ♀ ad Myzomela    ova 1.5 mm    "    "    base 1. mand light  
MYZ    iris brown

✓ 3193 *Zosterops cinerea* fr. 2 mm. fruit iris brown

3194 *Stad* " " " " " " " " " "

5195 7im. *Aplonis* 115m sk. 11.94" 11 "yellow



## Catalog

Koror Palau

Muscicapa

6 Nov

- 3196 ♀ ad Lalage fat sm insects iris black, bill & ft. black
- 3197 ♂ ad Edolisoma soft pls: black stom: insects test: 3 mm
- 3198 ♂ ad Rhipidura iris dk bill black ft brown " sm " " 2 "
- 3199 ♀ ad Myiagra bill & ft black, iris dk. " lg " ova small
- 3200 ♂ im Collocalia sm insects t. sm.
- 3201 ♂ im Myzomela " " gape yellow " "
- 3202 ♂ im " " " " " "
- ✓ 3203 ♂ ad " iris dk brown " " flowers (cloacal tubes) " 6 mm.
- 3204 ♀ im Aplonis very fat, ova sm, fruit, iris y.
- 3205 ♂ im " " " t. 4 mm lg " " "
- 3206 ♂ im Ducula t: sm. iris dk. bill black fat 2 sm windows ft pur-brown

Pelelia, Palau7 Nov

- 3207 ♂ Halcyon chloris t. sm. crab & lg. insects usual colors

Koror, Palau3208 ♂ Emballonura

61-16-7-12

3209 ♀ ad Psamathia

breed patch

tarsi tan  
ft. Lm golden tan  
ova s. iris grey-brown3210 ♀ im Collocalia

o. small.

insects

fat

MVZ

✓ 3211 ♀ im

"

"

"

"

"

MVZ

✓ 3212 ♂ im Edolisoma (8 Nov)

t. 2 mm "

iris brown

3213 ♂ Pteropus

iris brown

220-42-23

testes lg, descended

3214 ♀

"

"

205-42-22

3215 ♀ Snake.

3216 Actitis

ft greenish-cream

bill dusky

3217 ♀ Pteropus (8 Nov)

iris brown

185-42-22

v. fat

8 Nov

3218 ♂ Gecko

3219 ♀ "



Marshall, 1945

3

# CATALOG

Koror, Palau

- MVZ ♀ singing 9 November insects ova 1.5 mm  
 3220 ♀ im Psamathia bill ft golden tan, um. black iris dk br-grey  
 MVZ ♀ ad Colluricincla bill & ft dk brown iris dk grey o. small fruit pits  
 MVZ ♀ im " iris (light) grey " " " " " "  
 MVZ ♀ ad " " " " " " " " fat  
 MVZ ♀ ad " " " " " " " " insects  
 3225 ♂ Emballonura 58-12 8-13  
 MVZ ♂ im Zosterops cinerea bill black t. 2mm iris inner ring brown  
 3226 ♂ im Zosterops cinerea ft dk slate fat outer " grey  
 3227 Halcyon chloris crabs gonads small  
 MVZ ♂ " " t. small insects some fat " "

10 November

- MVZ 3229 Lizard  
 3230 ♀ ad Psamathia 11 November iris grey-brown  
 MVZ o. small, insects, colors same 3220  
 3231 ♀ im Rhipidura bill black ft grey o. sm. sm. insects  
 MVZ ♀ ad Mylagra testes 5mm bill-ft black sm. insects  
 MVZ ♀ im Aplonis o. sm. fruit very fat iris yellow

12 November

- MVZ ♀ ad Rhipidura bill black o sm. sn. insects ft iris grey-brown  
 MVZ ♂ im " ft sm " " base bill yellowish  
 3236 ♀ im " o sm. " " " " " "  
 MVZ ♀ ad Aplonis papaya, 1 spider o. sm. iris yellow fat  
 MVZ ova 4mm ♂ im Rallus philippinensis am. snails & green stuff; iris red, ft greenish-grey  
 3238 ♀ large Rallus philippinensis bill grey tip, pink base  
 MVZ ♀ ad Ptilinopus iris dull orange ft. violet very fat  
 3239 ova 2mm fruit bill green

Babelthrap, Palau

13 November

- MVZ fr dk blue-grey, um. blackish, l. m. ft. grey at base. iris white  
 3240 ♂ im Zosterops conspicillata ants & pulp fat testes 1.5mm  
 MVZ ♀ ad Psamathia iris olive, bill dk above, l m & ft golden tan  
 MVZ old? brood patch, insects, ova sm, ovary mature.  
 3242 ♂ Mylagra bill ft black sm insects testes maximum



Marshall, 1945

4

Catalao  
Koror, Palau

13 November

- MVZ  
3243 Tree Toad
- MVZ  
√3244 ♀ Ducula ovary sm. bill black. lg fruit whole, sm berries
- MVZ  
3245 ♂ Emballonura 57-12-8-12

14 November

- MVZ  
√3246 ♂ Caprimulgus 2<sup>or 3</sup> lg beetles (done) dusk + 4mm.
- MVZ  
√3247 ♀ " " insects digested midnight ova " "
- USNM  
3248 ♀ Pteropus 210-40-25
- MVZ  
√3249 ♂ ad Callicolumba bill black, ft red ground-up berry pits testes large
- MVZ  
√3250 ♀ Edulisoma o. small berries + insects
- 3251 ♂ im " + " iris inner <sup>dull</sup> violet, outer orange
- 3252 ♂ ad Philiopus + 9mm fruit ft very fat
- MVZ  
√3253 ♂ ad " " " " " " "
- 3254 ♀ ad " ova 3.5mm " " " "
- 3255 ♀ im " " small " colors duller not fat
- MVZ  
√3256 ♀ im " " " " " " "
- MVZ  
√3257 ♂ ad Streptopops consp. insects testes 4mm. bill dk gray, light at base
- MVZ  
√3258 ♀ " " " iris white ova sm " " "
- 3259 ♀ im " " " iris white o. ary sm. " " "
- 3260 ♂ im " " " + 5mm iris white " " "

16 November

- 3261 ♂ Rallus exulans 271-139-28-17
- 3262 ♂ " " 260-133-26-17
- 3263 ♂ " " 256-129-26-16
- 3264 ♂ " " 252-124-25-15
- 3265 ♀ " " 258-128-26-17
- 3266 ♂ " " 213-106-25-15
- 3267 ♂ " " 205-106-25-14





5

Koror, Palau

18 November

- 19 November

- 20 November

- 21 November

- 3279 Skink grasshoppers, ova 1.5 mm ft. whitish with small grey  
MVZ skeleton  
• 3290 ♀ "Otus" iris brown, bill white, scales d. and sm. cream  
MVZ bill black above, white below, scales ventrally, ova small  
✓ 3291 ♀ Halcyon cin. grasshoppers iris dusky-brown, ft dk grey above, buff below



Peleliu, Palau24 NovemberMVZ  
✓3292♀ Gallinula

pickup

MVZ  
✓3293♀ Halcyon chl.

ova 1.5 mm, orthoptera,

MVZ  
✓3294

♂

"

"

t. sm.

crabs

MVZ  
✓3295♀ ad Myzomela

sm. snail, insect, veg?

iris brown, ova 2.5 mm,

MVZ  
✓3296♀ im Rhipidura

sm. insects

ovary small

l.m. mostly buff

ft. light pearl grey

MVZ  
✓3297♀ ad Rukia

veg. material, ova 2 mm,

ft. y.-olive, u.m. brown, l.m. orange

iris chestnut

25 November

MVZ skel

•3298

♀ im

Z. cinerea

insects

Koror, Palau

3299

♂

Mus

164--84--15--11

26 November

MVZ skel

•3300

♀ ad Edolisoma

ova 11 mm

caterpillars

bill &amp; ft black

iris dk brown

MVZ  
✓3301

♂ im

"

insects,

t. 4 mm,

2 sm windows,

"

"

"

"

-3302

♀ ad

"

"

ovary mature,

ova sm

"

"

"

"

-3303

♂ ad Myiagra

su."

t. large

-3304

♀ ad

"

"

o. sm.

-3305

♀ ad Myzomela

sm. insects

ova 1.3 mm.

-3306

♀

H. chloris

scales &amp; bones of lg. green lizard

ova small

-3307

♀ laying

Rallus

phil.

AraKabesan, Palau

salmon at base, ft light grey

iris red, bill brownish grey at tip

Babelthuap Airstrip, Palau27 November

-3308

♀ ad Rhipidura

o. sm.,

sm. insects

ft grey, bill dusky

iris dark

-3309

♀ im

Hirundo rustica

ovary small,

sm. insects

some fat

-3310

♂ im

Collocalia

testes 1.7 mm

"

"

MVZ

✓3311

♂ ad

Z. conspicillata

first t. 2 mm.

iris white, ft. blue-grey (lead), u.m. black, l.m. light grey

grey at tip

-3312

♂ ad

"

berries

t. 2 mm.

"

"

"

"

-3313

♀ im

"

berries

o. sm.

"

"

"

"

MVZ

✓3314

♀ im

"

"

"

"

"

base lighter

u.m. dk grey

"



Marshall, 1945

Catalog

Babelthuap Airstrip, Palau

27 November

- 3315 ♂ ad *Zenaidura* t. 2 berries  
-3316 ♂ ad *Myiagra* t. 5 cloacal glands

Koror, Palau

- 3317 ♀ ova small grasshoppers bill dorsal + tip black, sides pale  
+ *N. nycticorax* ft. pale y., skin hd. pale greenish

28 November

- MVZ skel + sm. ground-up berries  
• 3318 ♂ *Megapodius* iris light brown, bill orange, tarsi yellow, heel orange  
-3319 ♀ " colors same crushed pits ovary im - virgin  
MVZ ♀ " gravel, pits, sm snail ovary small  
✓ 3320 ♀ im " bill horn color, ft olive grey above, y below, iris olive-tan  
MVZ ♂ ad *Gallinula* bill black, ft. deep pink, iris dark brown  
✓ 3321 ♂ ad *Gallinula* bill black, ft. deep pink, iris dark brown  
MVZ ♂ ad *Myiagra* bill + ft. black, iris very dark t. lg. larger insects

Babelthuap, Palau

29 November

- MVZ. ✓ 3323 ♂ im *Hirundo* rushing flies, etc. t. sm.  
MVZ skel • 3324 ♂ *Anous stolidus* stom mt. perched in tree on summit of Babel. Mts.

Arakabesan, Palau

- MVZ 3325 ♂ *Emballonura* 57-14-7-11 to tail

Koror, Palau

- 3326 ♂ *Caprimulgus* t. 4 mm beetles, 1 grasshopper

Babelthuap, Palau

30 November

- MVZ ✓ 3327 ad *Hirundo* insects gonads sm. molting from im  
MVZ skel • 3328 ♂ im *Lonchura* crop with sm. seeds t. small, to adult plumage  
-3329 ♂ ad " bill + skin around eye light blue, ft. blue-grey, iris red  
MVZ ✓ 3330 ♂ *Phalacrocorax* 1 crayfish t. small  
pouch + sides of bill yellow, d. bill black, ft black, line from nostril to eye  
-3331 ♀ ad *Lonchura* colors same as 3329 ova .8 seeds  
MVZ ✓ 3332 ♂ *Halcyon cinn.* t. 4 mm 1 lg. cicada

4.0  
1.0  
2.0

Marshall, 1945

8

Catalog

Babelthrap, Palau

30 November

- 3333 ♀ Halcyon cin. ova small, lg cicada  
MVZ  
✓3334 ♂ ad Lonchura colors same as above, seeds 4.4  
MVZ  
✓3335 ♀ im " " " "ovary sm.  
MVZ  
✓3336 ♀ im " " "except l.m. light grey, iris duller  
-3337 ♀ im " " " ovary small, seeds  
-3338 ♀ ad " laying " " brood patch  
MVZ  
✓3339 ♀ ad " oviduct enlarged " " lg. crop full of seeds  
-3340 ♀ im " orary sm. um blackish l m grey (blueish)  
MVZ  
✓3341 ♂ im " t. 3 colors same seeds  
-3342 ♀ im " 2 sm. windows skull mostly complete colors: um. blackish, seeds oviduct large, ova 1 mm  
-3343 ♀ H. chloris ova small, (ovary lg) lg. insects

Koror, Palau

2 December

- 3344 ♂ R. rattus 416-218-38-23  
3345 ♀ " exulans 8 mammae 263-137-27-17  
MVZ  
✓3346 ♀ ad Myzomela laying bill all black  
MVZ skel  
↓ of old insect → 3347 ♂ ad Gallicolumba colors same as previous berry pits t. 9mm  
↓ DT in  
yrophyllite 3348 ♂ R. exulans testes descended 276-131-27-17.5  
3349 ♂ " " " " 252-128-27-16  
3350 ♂ " " " not " 224-118-25-16  
3351 ♀ " " All ♀s with 8 mammae 284-138-143-27-17  
3352 ♀ " " 275-145-25-16  
3353 ♀ " " 276-140-27-17  
3354 ♀ " " 4 embryos 273-140-25-16.5  
3355 ♀ " " " " 261-130-25-16  
3356 ♀ " " 256-130-27-16  
3357 ♀ " " 258-132-25-16  
3358 ♀ " " 248-130-26-16.5





Marshall, 1945

Catalog  
Koror, Palau

2 December

3359 ♀ R. exulans

241-128-26-16

3360 ♂ R. rufus testes descended 411-218-38-22

3 December

✓ MVZ 3361 ♀ ad Muscicapa ovary sm - virgin insects bill ft black, gape yellow  
-3362 ♀ 2 sm windows, iris: narrow inner ring y-green bill green  
ova 2mm tilinopus berries wide outer " y-orange  
eyering dull y. ft. vermilion

Peleliu, Palau

4 December

MVZ skel green caterpillars, iris light brown ova 1.7mm d. part u.m. horn color  
• 3363 ♀ ad Rukia ft greenish yellow rest bill orange  
-3364 ♂ ad " caterpillars cloacal glands, singing t. 11mm  
colors same except bill & ft. duller, ft. olive-green

5 December

MVZ  
✓ 3365 ♂ ad Aplonis iris y, bill & ft black, pads dull y. fat fruit t. small  
? 3366 ♀ ad Rukia iris reddish-brown, ft olive-y, bill olive-tan above ova 2.2  
rest orange fruit  
✓ MVZ 3367 ♂ ad Psamathia iris olive-grey, bill dk brown above, rest orange, golden  
MVZ skel insects  
• 3368 ♀ ad " laying brood patch starting " " " " " " ft dull  
yellowish  
MVZ skel  
• 3369 ♀ H. chloris iris blackish-brown ova small, 1 sm. insect  
MVZ skel  
• 3370 ♀ H. cinn " " " " 2.5 mm lg. grasshopper  
ova 1mm, warbling call, lg. insects  
-3371 ♀ Psamathia iris olive grey, bill dk br. above, rest orange, ft. olive-yell  
cloacal tubules ants v.m. olive-horn t. 10mm  
-3372 ♂ ad Rukia iris reddish-brown ft olive-y l.m. tip buff-horn, rest orange  
t. 10mm caterpillars & ants  
✓ 3373 ♂ ad " " " " " " bill same except all l.m. "  
-3374 ♂ im Edolisoma bill & ft. black, pads olive t. 3.3mm veg material  
t. 8mm. hard berries  
-3375 ♂ ad Gallinolumba " black, iris dk brown, ft. & eyering deep pink  
MVZ  
3376 ♀ Pteropus 200-42-22  
MVZ  
3377 ♀ " 210-45-23  
MVZ  
3378 ♀ " young of 3377 110-33-16

6 December

MVZ t. 6mm. Katydid lids olive-yellow, ft whitish with grey scales above, cream scales below  
✓ 3379 ♂ " Otus iris dark brown, bill white, dull pink at base, cere light grey  
MVZ fat, laying, stom. empty  
✓ 3380 ♀ ad Nycticorax calidonicus iris y, skin lettuce-green, bill black, ft creamy-yell  
tarsi dull pinkish, ft greenish,  
yellow under toes  
-3381 ♀ " " " " " " sides bill (basal 2/3) greenish,  
rest black



MVZ skel Marshall, 1945 Peleliu 10 Dec pickup  
3381A *Nycticorax caledonicus* Catalog

Saipan, Marianas  
15 December

- MVZ skel.  
• 3382 ♀ im *Collocalia* iris dk, bill toes black, tarsi light <sup>ovary sm.</sup> <sup>esp. underside</sup> sm. insects  
3383 ♀ im <sup>layer</sup> " colors same ova sm " "  
3384 ♀ im <sup>one</sup> " " " " " "  
3385 ♂ im <sup>skulls</sup> " " " t. 1mm " "  
3386 im <sup>skulls</sup> " " " " " "  
3387 ♂ im <sup>all</sup> " " " t. 1mm. " "  
MVZ skel  
• 3388 ♀ im *Rhipidura* iris dk, bill black, base dull orange, ft grey-brown <sup>sm. insects</sup> <sup>moulting, ad. plumage</sup> ovary sm.  
3389 ♀ ad <sup>2 sm. windows</sup> " <sup>ova sm.</sup> " " " " base l.m. white " " " <sup>sm. insects</sup> <sup>insects</sup> <sup>ovary mature, ova sm.</sup>  
3390 ♀ im *Cleptornis* iris maroon, bill ft light orange, narrow <sup>dk</sup> brown eyering " " " " " "  
3391 ♀ im " " " " " " " " " " <sup>fruit</sup> <sup>ovary mature, ova sm.</sup>  
3392 (♂?) im " " grey-brown, " " part orange, part brown. <sup>fruit</sup> <sup>fat, berries</sup> <sup>t. 3.5mm</sup>  
3393 ♂ im *Zosterops* iris reddish-brown, v.m. & tip l.m. blackish, l.m. & ft blue-grey  
3394 ♀ ad " fat, ova 1mm " " " " " " " " " "

Bird MVZ

skins 313

skel 31

etc 3

Ind Hatzel & generally MVZ

skins 334

skel 32

etc 3



*Sight Records of Birds*



Marshall, 1944

1.

Records of birds seen  
not collected

APU #244

Marianas Islands

About 21 Nov - Pond N radio station

Small grebe like Podilymbus one seen  
Dec 11 - 20

Purple gallinules with red shield & bill  
seen daily in Sinsupe marshes - extreme  
north end of marshes - hide in  
tules.

Nov & Dec - Golden plovers in flat bare ground  
Usually 7 or 10 in a flock

Dec 26 Frigate bird - all black hovering  
over mountain at N-E end; also Crow?

White-tailed Tropic bird flew to  
cave high on cliff at NW corner <sup>prison</sup>

Dec 24<sup>th</sup> & 25<sup>th</sup> Wood pigeons - grey  
with white band tip of tail - <sup>pearly -</sup> basal  $\frac{1}{3}$ <sup>rd</sup>

One perched in tree on 24<sup>th</sup>. Flock of  
6 flew over 25<sup>th</sup> in area N. Marine  
Dump. many ♂'s of Wood Pigeon seen.

(Black with white head)

Brightly patterned bird seen by Edgar & Hagen  
on road from 176<sup>th</sup> Sta Hoop to Isley field  
and Fruit bat at 176<sup>th</sup> Sta Hoop (Hagen)  
about 21 Dec.

TA 205

Jan 7 1945

Gorge, 1<sup>st</sup> south of the one with the natural  
arch over the road. This narrow gorge  
faces the east and ascends about 50 yds

# Birds of San Juan :

1. Frigate bird Fregata
2. \* Egret Casmerodius egretta Mesophaps intermedia
3. \* Bittern Exobrychus sinensis
4. \* ~~Rail~~ Int. Tapeworms and Caecal Flukes Gallinula chloropus
5. ~~Gallinula~~
6. White-tailed Tropic Bird Phaethon lepturus  
Jan 5 5 end 2d.
7. Fairy Tern Zygis alba
8. \* Kingfisher Hippoboscid fly Halcyon chloris
9. \* Field Dove Streptopelia bitorquata
10. \* Wood Pigeon Gallucolumba xanthonura
11. \* ~~Band-tailed Wood Pigeon~~ Fruit Dove Ptilinopus
12. \* Swiftlet <sup>Collocalia</sup> <sub>new beetles & ants</sub> <sup>spiders in stom</sup> <sub>louse 2 specimens mites</sub>
13. ~~Crow?~~ Pteropus
14. ~~grebe?~~ Polioccephalus ruficollis
15. \* ~~Old-world Flycatcher~~ Fan-tail Rhipidura rufifrons
16. \* ~~Depressed Honey-eater~~ Myzomela cardinalis 2 both Haemoproteus and microfilaria
17. \* ~~Grackles~~ Starling Aplonis 1 microfilaria
18. \* ~~Winkles~~ (Golden) Cleptornis marchei 6 Haemoproteus
19. \* ~~Japanese White-Eye~~ Zosterops 2 None
20. \* ~~Brightly patterned perching bird~~ Heteroscelus insanus
21. Golden Plover Pluvialis dominica



Marshall, 1945

2.

GPO #244, Marianas

~~Jan~~<sup>Jan</sup> where it opens into a broad grassy valley (75 yds across) surrounded by a few large trees and dense smaller trees, vine tangles. 2 Ptilinopus and a black & white pigeon taken this afternoon.

8 January early morning same place. A very beautiful gorge with large trees. All land birds seen here. About 12 Jygis alba hovering among and alighting in large trees of gorge - harsh snarling sounds. Several pairs of Swiftlets with regular <sup>slow, fluttering, flapping flight, frequent sailing.</sup> short forage beats in the gorge. Flock of <sup>25</sup> on hill above gorge. 1 pair Halcyon hanging around tree overlooking gorge - loud ~~settling~~ calls. About 25 Aplonis ad & imm. Food calls heard. apparently feeding young. Flock occasionally flew to lg tree with harsh, squeeling calls & males(?) giving starling-like songs - typical starling song - sweet & bubbling notes. Other times single birds or 2's & 3's fly and creep among lower trees noiselessly. Very curious - easy to attract with squeaks.

Myzomela cardinalis (2?) several pairs - loud clear whistles & <sup>Hutton</sup> tree-like notes. Fly high & light in tops bare trees. Getting nectar from tree with red




Marshall 1945

3.

GPO #244

Marrares

8 January

blossoms - trumpet-like . ♂'s chase other birds away from their blossom-tree (esp. Zosterops). All three kinds of pigeons present - Philinopus cooing coo-coo coo-coo-coo, co, co, co, co and perching in fruit-bearing trees very tame. Walk and turn about on twigs like a parrot. (Note - thick fleshy, feathered tarsi.) Black & White ♂ pigeon usually with brown ♀, alighting in low fruit trees & flying with slow labored beats to tall trees above gorge. "Field Dove" in groups of 7 or 8 flying low over grassy area - very swift direct flight with powerful strokes. Fan-tails common, about a dozen seen, usually solitary or 2's & 3's. Song - a descending cascade of high drizzling whistles like Ant Wren or Golden-crowned Kinglet. Forage <sup>vines</sup> amazingly rapidly among dense growth 2-6' up - penetrate densest cover tail always fanned out. Rapid darting flights after insects. "Yellow Warbler" one solitary in dense undergrowth. Stands high and flicks wings like a Thrush.



Marshall, 1945

4.

APD #244 Marianas

8 January

Young collected from 15' in tree - an acacia type where *Zosterops* always forages. Several seen - chasing each other with wren-like calls. Song not heard. Forages in foliage. About 30 *Zosterops* in loose flock - forage especially in the trees that have small leaves & acacias - always found in that type of foliage. Many siskin-like calls. Flick wings often. Rapid movements in foraging in foliage. A common posture is like a nuthatch with bill & body in line. One large mixed flock foraging in little-leaved trees together - 20+ *Zosterops* high, 5 or 6 *Rhipidura* low, chasing each other and singing. 4 or 5 "Yellow Warblers" middle heights and soon made off to denser low growth. No ground foraging birds seen. *Myzomela* doesn't associate with the other small birds - stays higher up and takes long aerial flights above trees.



Marshall, 1945

5.

1 Feb W edge Lake GPO #244 Marianas

Large black duck or smallgoose  
like Black Brant seen over  
marshes (several night before).

Two swallows, white below,  
throat & tail black and apparently  
a white spot within the black  
anterior area, forked tail; in  
flight just over treetops edge  
lake.



I don't think  
it was a

"swallow-tail" like

Barn swallows just

graduated. — A new shore bird  
notably turnstones flock of 10  
pure white below except for  
black throat & ant chest.

Still large (30) flocks of Golden Plover.  
"Thrasher"

could be  
in barn swallow?





## *Species Accounts*



Marshall General Accounts of Marianas Birds Mus Vert Zool  
Saipan 3 Dec 44 - 16 Feb 45, 17 Apr 45 - 24 Apr 45,  
20 July 45 - 3 Sep 45.  
Tinian 20 March 45 - 14 Apr 45. Joe T. Marshall, Jr.  
Guam 26 May 45 - 6 June 45.

Saipan Foliocephalus ruficollis?

21 Nov 44 One seen on small pond. Dark, uniform color. Possible  
could have been young Gallinula chloropus.

Saipan Puffinus pacificus

I saw specimen picked up by Marine Epid Unit, flew into light.

Phaethon lepturus

Saipan Seen occasionally in flight in front of largest cliffs.  
Seen to go into caves high in the cliffs.

Sula leucogaster

Tinian Seen twice, single birds, on trip over to Tinian, 20 Mar

Fregata

Saipan 26 Dec 44 One hovering over mt at N end island.

Tinian 20 Mar 45 Several seen on trip back and forth from  
Tinian. Always far out from land.

Guam 6 Jun 45 One plying along over shore SE side island, evening.

Demigretta sacra

Saipan 9 Feb 45 Shore Magicienne Bay, afternoon. One flushed from  
dense brush on rock bluff at shore. Flew out over bay. Grey phase.

Tinian Photo and record of nesting by Richard Genelly.

Guam 4 and 6 June 45. Reefs on SE edge island. Foraging in  
1 ft water 100yds out from shore, active in late aft and eve.  
Stand and rest singly or in pairs on sand beach. 2 grey, 1 white.

Mesophoyx intermedia

Saipan Flock of 50-100 inhabits marshes at L Susupe. Sometimes  
feed under and around cattle. Hunted them on 10 Dec 44. Flock  
resting at noon in patch of low grass surrounded by high cane.  
Well concealed. About every ten min one or two, apparently  
scouts would fly over me or light near me at the edge of the  
farms where all had been feeding. The flock didn't return til I  
had left. Apparently absent from April through July. Seen Aug.

Tinian About 25 L Hagoi.

Guam 1 June 45 Only one seen; marshes at main harbor.

Nycticorax nycticorax

Tinian 4 Apr 45. 6 flushed at noon from dense growth fern-like  
plant growing at edge of L Hagoi. Only the seen. Apparently migr.

Ixobrychus sinensis

Saipan Common in tule marshes, next commonest in damp cane fields  
or wet grassland, some in dry cane and grassland.

Seen flying often on long flights over cane-covered hills.

Call: harsh "craak". Clings to eattails one in each foot, spread



apart. Walks like a parrot through the middle height of these stems.

Tinian Restricted more to vicinity of marshes, where very abundant at Lake Hagoi and Marpi Valley swamps. Watched in tules at L Hagoi. Foraged at edge of dense tule stands while sitting grasping a tule in spread feet, sitting hunched up, in a compact ball, and very still. Then suddenly extends long neck to grasp a fish or frog - a movement of extreme rapidity. Can sneak back into the inner tules and out again with such a fluid easy grace that one doesn't suspect the bird is in motion at all until it has vanished.

Guam Found ~~under~~ inland in marshes, and in the evening, feeding in lagoons within the reef on south-east side island. Here birds were feeding on small marine fishes side-by-side with the Reef Herons. They were skulking about in shallow water than the herons, (up to their bellies) but fed in identical manner. (Outward or downward thrust of the neck from a previous hunched up condition.)

#### Anas oustaleti

Saipan Seen on two occasions in two's and three's flying from marshes near L Susupe across hiway to marshes nearer coast.

Tinian I estimate a total of about 6 birds on L Hagoi while I was there. Very tame. I recommended strict protection and security from soldiers wandering into the lake area with guns. The mallards often in pairs, generally not out on open water, but in little ponds surrounded by tules. Flush and circle lake a couple times then settle down at other end lake. Feeding seen only in very shallow water, where no tipping-up seen - just plucking away at the grass in 2 or 3 " water. One family seen, hid in ferns.

Saipan 26 Sept 45 3 pairs seen over lake<sup>south</sup> in afternoon, 2 pr. at same time.  
27 Sept 45 4 birds seen over lake. Didn't alight.

#### Anas querquedula

Tinian Seen daily at L Hagoi - just one pair. Mate continued to be there after I had shot the one. Very wild - flushed as soon as boat would round the bend of the tules or ferns. Very graceful and swift duck. Fed at edge of larger lake areas always near protecting tall vegetation. Does not retreat into veg but flies.

#### Anas acuta

Saipan 7 Feb 45 Flock of 15 flew over L Susupe at 100ft in air. Kept straight - didn't return.

#### Nyroca fuligula

Tinian One pair on L Hagoi. Seen every day until one died and other collected. Both colored alike. The one that died was too far gone to save as skin or skel. Unlike other ducks at the Lake, these stayed always away from the margins of the lake and fed only in the open water, where they dove. When I would get within about 60yds, they would fly, after swimming away from me for quite a time. Circled high and wide around lake, keeping out of range, then land at another large body of water. After being



flushed two or 3 times they would head straight out to sea. Always back again the next day. Finally got one by sneaking into a patch of tall cane at edge of lake.

Gallus gallus

Saipan Tinian Guam: Heard or seen around native camps on all 3 islands, but noted in wild state principally on Saipan, where found far out in lonely canyons and around caves and dense woods. Beautiful fully-colored large cocks seen several times. One shot 24 Dec 44 by Millican - full color of jungle fowl.

Rallus owstoni

Guam 26 May 45: Several young heard and finally seen. Pure black and made slight squeaking sounds like small warblers (Lutescent). Hid in densest vines, kept calling to each other. This family occurred in a cleared area which was surrounded by jungle, and was damp and grown up to ferns, mixed with dense grass. 30 May: saw one cross the road 100 yds ahead of the jeep while driving. Ran into ferns and dense grass on wet ground at side of road, also near cleared area overgrown with ferns. Stopped the jeep and found the rail looking at me at the extreme edge of the grass. Had walked back out to the edge to satisfy its great curiosity. Was easily coll with 22 aux.

Gallinula chloropus

Saipan Two places only where I have seen them: tule ponds around L Susupe, pond surrounded with cane and tall grass north OWI station on hiway. Generally seen on these two places either swimming and feeding by sticking the head under water, or walking in the vegetation with tail up and flicking constantly to show the white pattern. Most birds seen winter and spring 45 were imm. Tinian Only at L Hagoi where common, especially in real tules. Guam In marshes and wet meadows. Not common.

Pluvialis dominica

Abundant Saipan and Tinian in flocks. Last seen 21 April 45 when combed island for them (bare flat extensive areas) and finally found four, three of which were collected with one shot. Absent until about last week of July.

Charadrius mongolus

Guam I saw this bird feeding on a sand beach and also saw it after Baker shot it. However Johnson and Baker claim it's a semipalmated sanderling. This can be settled by asking USNM. The bird was collected 6 June 45.

Numenius phaeopus

Guam 1 June 45: One shot in grassland adjacent to marshes at main harbor. 6 June 45: common along the beaches and lagoons on se coast. In evening, feeding in water like the herons.





Numenius tahitiensis

Guam 6 June 45: One shot as flew over slough at river mouth and lit on pole. Possibly one more seen that day ~~out~~ compared to total of about a dozen N. phaeopus.

Heteroscelus

Saipan Tinian Guam Seen from 7 Jan at least until 6 June 45 (Guam) always and exclusively on rocks at edge ocean.

Saipan 26 Sept 45 <sup>Sterna albifrons</sup> 2 fishing on L. Susupe. 1 coll - 4 Gambusia  
Sterna sumatrana

Saipan 16 November 1945: Seen in channel foraging over open sea between Saipan and Tinian. Not certain but probably this sp seen on various trips over to Tinian.

Anous stolidus

Saipan Flocks seen in channel betw Saipan and Tinian on various ferry boat rides in Mch and Apr. Nesting or at least resting and flying to and from niches in cliffs al along east side island. That is cliffs actually at the ocean's edge.

Guam 31 May. One shot over jungle as chased a second, probably on some sort of mating flight which took them over the jungle.

Gygis alba

Saipan, Tinian, Guam Common, in fact one of the most frequently seen and conspicuous birds around patches of timber on the two islands, Saipan and Tinian. Only one or two seen on Guam. Very rare there, or else just spread out more over the much larger island. On Saipan, one sitting all day long for a couple of weeks during February (I think) on high ~~dee~~ bare horiz branch of Breadfruit Tree near our lab. Found principally around large banyan trees especially on steep hillsides or overlooking gullies. Noisy at times - snarling and squawking. Hover a great deal over foliage and branches before alighting. Spend a lot of time flying ar und the trees and back and forth past the hillsides and cliffs where their chosen trees are located. Seems like an awful lot of useless activity - which is neither feeding nor mating(?). Time spent on the life history might show significance to this behavior. Typical courtship flight is pair zooming (close together) like swifts

with wings held in crescent flying with 4" fish held crosswise in bill.  
26 Sep 45 Saipan

Ptilinopus roseicapilla

Saipan Tinian Guam Found almost exclusively in the largest and densest and greenest broadleaved trees on all three islands. These trees incidently ~~are~~ must be in areas of extensive forest. Therefore, since Guam is proportionately more heavily forested, there are relatively many more doves there per acre. But they are quite common in suitable isolated patches of timber on Saipan, and to a lesser extent on Tinian. The only exception to finding them in that type of growth is at Saipan, Lake Susupe, where I found a couple in the Casuarina trees at the edge of the lake, a mile from any native forest. They are absolutely impossible to see in the trees, because they stay so high and sit so still, except when actually eating a berry or walking about the twigs



like parrots. These birds have very thick, short, strong tarsi, and can maneuver on little twigs very well - can turn around like a parrot. An excellent example of concealing coloration, also these birds stick to the light green trees - maybe just coincidence because of certain crops of wild figs and other fruits they eat. Once I shot at a spot where I had seen one bird, and two fell. That shows how hard they are to see. When males are hooting they are very difficult to find, as they remain quite motionless. Call starting with very impelling "insistant" notes: cooo, coooo, coooo, coococococococoo cooo cooo cooo cooo. Only time seen much in flight was Saipan 24 Dec 44 when I saw a flock of 6 going straight over a canyon. Usually are at lower heights within level of jungle canopy. In certain places on all three islands where the birds are very abundant, they often come into smaller trees, and can sometimes be approached very closely. Not a flocking bird. Calls all during day.

Streptopelia- Columba livia

Noted once on Tinian in patch of jungle, perched. Flocks of obviously carrier or domestic birds seen Apr on Saipan.

Streptopelia bitorquata

Saipan Tinian Guam Abundant on all three islands. Feed singly or in pairs on bare ground on trails, dirt roads, or clearings. In flight they like to fly very low over bare grounds or uniform grassy fields. In any one place, such as my barracks, which is at top of a slight knoll, they are always going on the same path. They stay close to the ground, but make great zigzags or aerial leaps over telephone wires and around tents. It has always seem to me that there are more birds coming down the hill, than back up it. So there must be an inexhaustible supply back of my house. March April May were doing much calling at all times of day. Sound pretty much like Chinese Spotted Dove, S. chinensis: rolling Coooo, cu- coooo.

Gallicolumba xanthonura

Saipan, Tinian, Guam Common in timber and wherever there are large trees. Not as many individuals as Ptilinopus. I have never seen these birds on the ground. I have collected them feeding in trees - often very high in wild figs. #2943 was eating papaya in a papaya tree 15 ft off the ground. Generally paired. Most often seen on long flights high over valleys and ridges. Flight unique among birds - very ~~laborious~~ laborious, deep strokes, wings look like they are beating backwards. The bird actually seems as if fighting against a strong head wind. These long wandering flights always by solitary birds. Very quiet and well concealed (especially females) when in timber. Mating call a low green moan - 000000h (as in moon). A single note, uttered at intervals of 10-20 sec. Another remarkable call heard on Guam, when the birds were mating. (1st part of June) Very loud and long crrrrrrreeeeek sounds like gigantic cicada or snarl or beginning of toad's call.



This call given when males are pursuing females. Female flies to high bare limb and begins walking along a horizontal branch toward the protection of the foliage. The male flies up to her and gives this creaking note possibly just as he alights. He walks rapidly after her, following thru foliage, and jumps to the other branches where the female goes. Then on to the next tree. Females very hard to find and to collect. Much less often seen in long flights.

### Collocalia inexpectata

Saipan Present year around. Seasonal fluctuations noted to some degree. For instance in Jan and Feb, these swifts would gather in the area of AGF headquarters (open treeless area on the e slope Mt Tapochau) at dusk. Thousands of them all foraging low over the ground. This particular congregation not noted at that place other months. At a given season, both pairing and flocking can be found. One canyon had a pair that had a regular forage beat just like a pair of Rough-winged Swallows - generally at the level of the lower branches of the biggest trees. The round trip must have been about 75 yards, and they made it every minute or so. At the same time there was an entirely unrelated flock up above a nearby hilltop, which was milling around over the ridge. About 50 birds. No organized beats, no pairs. Very common on Saipan, but usually around canyons, steep hillsides, where plenty of large trees. Flight very slow for a swift, and faltering. Tinian Extremely rare. Seen only 3 times in 4 weeks, each time a single bird.

Guam Nesting found in caves on cliffs by Dave Johnson. Lots of guano. Nest said to contain a lot of plant material and is there for inedible. ~~Not-as-frequently-~~ Occurrence same as Saipan, altho they get into a lot larger flocks. Bigger island, more swifts, and much bigger flocks - up to thousands.

-- Note very interesting stomach analyses in catalog --

### Halcyon cinnamomina

Guam This bird is so different in habits, calls, habitat, nesting, etc from chloris as to leave no doubt in my mind that they are different species. It is shy and retiring, is never seen on conspicuous perches in open country, never seen on phone wires, and is hardly ever heard to make a sound. It was a long time on 26 May before I found out what these uncanny weird sounds were. Finally tracked it down (through some of the densest jungle and undergrowth I have ever seen) to a large banyan type of tree where there was a nest hole about 20 ft up belonging to a pair of these kingfishers. Young were being fed and giving food calls but the strange ventriloquial wheezes and rolling calls (of unique timbre) were coming from the parents. Later on Guam, I finally heard a note suggestive of chloris, but greatly toned down, and somewhat mellow - a series of two syllable calls, the 2nd component of which very much higher than first (a parallel to a donkey's "hee-hoh").

Always in pairs, or pairs with a few young around - in latter





case more talkative, ie. when a group occurs. (The group hypothesis applied to birds.) Find an unusually dense large tree, in a normally dense high forest, and there will be your pair of kingfishers. A bird will sit for a long time on high perch in the foliage without moving a muscle. Generally very quiet also. Seen chasing and intimidating Zosterops several times. Confusion chorus heard.

Halcyon chloris

Saipan, Tinian No differences noted in behavior on two islands. Food: Large insects or small animals. Stomachs generally contain large beetles, and most often - large locusts. On Tinian 12 Apr, I shot at a bird that was sitting on a horiz limb overhanging a cliff. It had a House Mouse in its bill. I missed the bird, but it dropped the mouse, which I could have made into a very nice specimen except that the skull was pulverized. It was still warm, and undoubtedly the kingfisher had caught it. Similarly on Saipan, 21 Apr one was sitting on a telephone wire just as the shrikes do in the states. It had a skink in its mouth, a full grown skink. This time I collected the bird and lost the prey.

This species has an amazing habit - that of harrying Zosterops. The Zosterop flock flock has a flock alarm note much like that of the bush-tit, which I have only heard when a kingfisher comes near the Zosterops. I have never seen them catch one of the small birds, but the number of times I have caught them ~~at-it-eenvinees~~ attempting it convinces me that it must be the regular thing. So far no bird remains in stomachs, however. The kingfisher can travel very rapidly at such times. It will dash into a dense acacia tree like a sharp-shinned hawk, will perch and sit very still for a long time, before trying again for a Zosterops. The latter birds keep up their "confusion" chorus, although it diminishes, only to burst out with full vigor when the kingfisher takes ~~fli-~~ another flight. Here, as in all its other hunting, the Kingfisher uses the shrike technique - of sitting very still waiting for its prey to move, then making a swift dash for it. A further note - Saipan 3 Sep 45, reveals more of the feeding habit: In the evening I was sitting on the porch of the Officer's club at the 148th having a whiskey and coke. The porch has a fringe of acacias in front of ~~it~~ it. It was nearing darkness, but a kingfisher in the acacia seemed to be in his busiest time of day. He was foraging out from a fixed perch on an acacia limb, in flycatcher fashion - ie, a rapid dash after some item of food, then slower return to the original perch, where he would sit motionless except for scratching and fluffing out his feathers occasionally. (Most of these birds have louse flies - the young are especially heavily infested.) Most of the flights took him to the periphery of a certain acacia, where he seemed to be picking large insects off the foliage. It was therefore not aerial flycatching - but did involve hovering in front of the foliage. Resembles Mot-mot greatly.

I have not seen Kingfishers catch prey from a perch on a telephone wire or bare limb over a field (shrike perches) - but the they must surely do it or else they are wasting a great deal of time sitting in those places.





Habitat: Open meadows where large trees for perches are near. On Tinian, favors the long lines of acacias that stretch across the open country. (Apparently these acacias were used as boundary markers.) Perch on bare high branches overlooking meadows or on telephone wires. A frequent item of necessity in the habitat is a large gnarled densely-foliated tree. Apparently used for nesting. On Tinian, I took a trip one afternoon down a hillside road, and stopped the truck at every such dense dark green gnarled tree. There was on about every 2 - 300 yards. There would be a kingfisher in each, which I wouldn't see until he became curious enough to drop down into view. (This was 14 Apr) This happened at about 5 trees. In each case, the bird was somewhere in the interior of the tree and couldn't be seen from the road. I couldn't account for the fact that there was only one bird at each tree, because they are usually in pairs.

These birds are also found in timbered canyons. But they make ~~el~~ long flights, and on these islands there is always open country adjacent to almost any timbered canyon where kingfishers are found. The commonest I have seen them is at Marpo Valley, Tinian, where there is open swampy ground with a lot of large breadfruit trees, spaced far apart.

The preference for dense gnarled trees mentioned above must indicate that they nest in cavities in such trees. However the only nest I have actually seen is in a road bank of red soil on Saipan. There are two cavities there, one contained young in August 45. Food calls could be heard from the hole, 6 7 ft above the level of the road, and the old birds were usually flushed when we drove past. Both the holes are the same height and same construction. Opening about 3 " diam at first, but widened due to constant use, and claw marks indicated the source of the widening. Tunnel slants upward at about 15 degree angle for about 6 or 8 inches, then widens out into a large room, which I couldn't see well. The slant protects the nest from rain. I have seen kingfishers enter holes in coconut trees at Magicienne bay, Saipan. I presume that the holes in the road bank were excavated by the birds, but I doubt if the tree holes were.

Mating: When more than two birds get together, 3 - 5, there is much noise. The birds fly around at great heights calling and following each other in large circles, then go off in straight flight over canyons and ridges for great distances. A mating display often seen consists of the loud calls given by the bird in flight as he approaches a tree where another is sitting. As he alights, he stands with the body vertical the head and neck stretched out horizontally, the wings slightly outstretched, and the tail held about 90 degree to the back (this results in the tail and neck being horizontal and the back vertical). This position is held for several minutes, even after the bird stops calling.



Although chloris is not as numerous as Zosterops, it is by far the most frequently seen and most conspicuous bird (both by sight and sound) on these islands. The calls are very loud and strident. They are heard every early morning and every late evening, and at intervals throughout the day - often by solitary birds. One wonders what stimulus causes these latter to call. Ordinary call is very loud and usually in triplets: "clip clip clip, clip clip clip," or it can be a steady series of "clip's". When the birds are more excited, they follow the clip series with a sort of "hee-haw" the first syllable is low, the 2nd much higher. Very loud and creaking. These are the notes given by three or more birds indulging in aerial manoeuvres several hundred feet above the ground. "clip" note can be given in two's, or more often, merely in a long series with irregular intervals between notes. Perch at night in the

### Hirundo rustica

Saipan 7 Feb 45. Flock seen flying over Casuarina trees at S border L Susupe. About 15 in flock. I found that they were foraging low over a pond out in the open part of the swamp, so I hid in some cane there and shot one that was perched on a cane over the water. There were other swallows in this flock. Seen on one other occasion at the Lake.

Tinian 1 Apr. One lone bird flew around a few times over L. Hagoi. 7 Apr: Saw one in the early morning when I was picking up rat traps near the piggery N. Camp Churo. It took about 3 trips along a road that paralleled a line of acacia trees.

### Brown and White Swallow

Saipan 7 Feb 45 Flock watched, and birds seen at fairly close range but not collected. Appeared to be all dark rich brown above and pure white below, with a slightly indented tail. Didn't look like Rough-winged Swallow, nor did it have the chest band of the Bank Swallow. Also seen at same place (sw edge L Susupe) 1 Feb 45.

### Acrocephalus luscini

Saipan 10 Dec 44 Not noted in L Susupe marshes.

31 January 45: Cane and marsh east Charan Kanoa. Several singing in afternoon, one called up by squeeking. Stayed in densest cane. In marshy area. Since then found to be common in the entire lowland around Lake Susupe, with special abundance in the area of the civilian hospital, where there are many small trees planted. The birds here are tame, come right around the wards, and can be heard singing all day, and on moonlit nights. For the most part they require marshy habitat where there are a few larger trees, such as Casuarina sticking up above the cane. ~~For-the~~ Generally stay low in the cane, but ascend sometimes



into the trees and in full view to sing. Most of singing done from inside cane in the daytime, but in the evening I have seen them mount to the tip of a tree to sing, just like the Calif Thrasher. The song is much like that of a thrasher, because it is made up of phrases which are repeated. It has no set pattern, but could readily be mistaken for a thrasher's even to the harsh notes, and the sweet mocking-bird whistles. Usually start with two low harsh clucks the same way a Calif Thrasher does. Song lasts from 6 sec to half a minute, in case the bird is well steamed up. Usually about 10 sec. Call notes are low harsh clucks similar to those of Calif Thrasher, but not as loud. 27 Sep ~~at~~ at dawn on Lake Susupe, about 15 could be heard from around the lake. Go in courouses. Some hours of the day, all will be silent. Occasionally one or two will sing alone, but usually when they sing at all they all do it. No seasonal change noted in breeding or singing behavior. Very difficult to make statement as to habitat. It does not occur wherever there are marshes, and it does occur in other places: Naval Air Base, Tanapag (around the camp); cove south of 39th GH where there are several pairs along a little stream running through a fine forest growth; dense small tree growth over dry rocky ground at shore Magicienne bay (At least one pair); Several pairs and singing males heard and seen on the barren ridge covered with bunch grass on the center of the island east of the 118th GH. In this last locality, the birds are found in gullies where the grass is tallest and growing on rather moist ground. This type of distribution is unique on Saipan, where most of the birds show practically no habitat preference, and are uniformly common wherever there is tree growth. Therefor, these Birds can be described as locally common, with no explanation for their absence from certain areas. Note stomach contents mentioned in catalog - eat small animals and swallow small snails whole. ~~at the Agana marshes~~  
Guam Found only at the Agana marshes, where it is common in the cane, and ranges out from it at certain times of day into the wooded hills around the marsh (but not farther than 100 yards. ). Little evidence of diurnal cycle of singing. Sometimes they sing and sometimes they don't. Some days they don't sing much. That makes it very tough to collect them, even tho you know they are around, there is no way of tracking them down by sight.

### Rhipidura rufifrons

Saipan, Tinian, Guam Abundant throughout in the understory of the forest. Forage mostly withing 3 yards of the ground, often lower, in the middle parts of the bushes. Not in bushes outside of the forest. Tail kept spread, makes very rapid darts after flying insects. Usually solitary, but is so abundant that birds are constantly running into each other, chasing, and calling, and singing. They are very hostile to one another at times. In foraging the bird keeps in a horizontal posture, with tail spread, and head foreward. The flights are genally made straight out. Stays among the small twigs of the bushes, and can manouver through them and turn and twist in flight with amazing dexterity. Nest found with eggs in bush in marsh at L Susupe Saipan in February. Same deal as a Wood





Peewee. On a horiztwig, made of cobwebs, a very dainty and smoothly constructed thing. Sides vertical. These birds sing in a regular morning chorus at dawn, they are about the only birds that do this. The song is delightful, and is startlingly similar to that of the Long Billed Ant Wren of Central America. It is a descending cascade of thin whistled notes, each very distinct in spite of the rapidity of the notes - so they do not constitute a trill. Pitch is very high, but not quite as high as song of the GC Kinglet. Song often preceded by longer high call notes, which can also be used separately as call notes. Easily attracted by imitation of its song. Next to Zosterops, this is the most abundant bird on Saipan and Tinian. On Guam, it is the next most abundant to the Starling. (Ie on Guam, the Starling is exceedingly numerous, and Zosterops is relatively rare.

### Monarcha takatsukasae

Tinian In about equal numbers with Rhipidura ~~with the~~ and in some type of habitat, with the addition that this is exceedingly abundant in tall cane and other dense growth in marshes. Two such spots are the forest around Lake Hagoi, and the tall cane marsh at Marpo Valley. In such strictly cane and marsh habitat, Rhipidura is absent. Monarcha is a more stolid, phlegmatic bird than Rhipidura, it ~~ambles~~ <sup>flutters</sup> around in the foliage like a vireo, with the same occasional dashes after flying insects or hovering before a twig that vireos do. It is more often found on an exposed perch in the understory of the forest, sitting upright like a flycatcher and making insect-flights. Calls are loud harsh wren-like notes. Given often when birds are chasing each other. Song is beautiful, clear, and flutelike, a very pure tone. Usual form is three syllable 1st 2 short grace notes, 3rd a beautiful "whoooo" of descending inflection. Dybas found a nest of this species in March. ~~Like Rhipidura the birds are independent, foraging alone,~~ but because of their great numbers, they are always coming into association with each other. Song especially heard in evening. Generally paired.

### Myiagra oceanica

Guam Song consists also of a series of clear sweet whistles, this time a series of 7 notes, slightly inflected, all on the same pitch. Sounds exactly like one of the songs of the Plain Titmouse. A common species on Guam, tho not as numerous as the Fan-tail. Is more of a typical flycatcher in habits, foraging out from an exposed perch in the understory of the jungle. Call is a single whistled tone. Found in larger trees, and higher up than Rhipidura. Also a rasping wren-like call. Come readily to imitated calls or squeaking. Almost always found in pairs. Absent from open forest on dry rocky gnd. In such a place, they will be found in the occasional dark-green trees with small leaves (resembling Canyon Live Oak). Otherwise, always in the lower tree levels of the densest and highest forests. Flycatching posture is upright.





Aplocheilichthys opacus

Saipan Fairly abundant in dense timber. Can depend on always finding them around cliffs and rock bluffs, however. Occasionally seen in flight over other areas. Small flocks range far and wide, so that in a given tract of woods, they will be found at some time during the day. On the great cliffs at the north end of Saipan, they are always present, singing, and flying, and perching in crannies hundreds of feet up. I have seen nests in small potholes in cliffs. Song typical of starling; gurgling and bubbling notes intermingled with whistles. Long duration, sometimes fairly sweet. Calls, a wide variety of whistles, with many conversational variations, but always very loud. A moving flock (usually 5-10 birds) will settle for a time in tops of dead trees. They straggle in their flock movements.

Tinian Occurrence as at Saipan. Quite common in dense forest

Guam This is the most abundant and conspicuous bird on the island. They are everywhere. Always some in flight, every large tree has several. Loud calls and songs heard constantly from dawn to dusk. Drift through the woods in great, unorganized hordes. Adults much more wary than young, hard to approach. Young are very tame.

Corvus kubaryi

Guam Not abundant, but can be counted on to occur in any sizeable patch of heavy jungle. Calls frequently heard, and birds occasionally seen in flight over open areas. Call like an ordinary crow, and has conversational variations. This bird is amazingly secretive. There can be many foraging silently on the ground in dense jungle and there is no indication of their presence, unless they call. Usually that only happens after they have left your vicinity. Usually 2 or 3 together, but do not forage close to each other. Typical habitat: ground under dense jungle. *Notes: sings from trees, insects, birds & flowers*

Cleptornis marchei

Saipan This is at least one bird that is not universal in habitat. That is, it actually does not occur at Lake Susupe. It inhabits dense small tree growth under the cover of the large forest trees. Also in hillside patches of small trees. Very numerous, especially in type of growth on dry rocky slopes. Not a flocking species, but there are always 3 or 4 in the same area, sometimes more. They chase each other, uttering strident wren-like notes. Generally in lower trees. On 21 Jan 45, saw young staying in one place high in tree and giving a food-call - a mellow whistle - plaintive. No song or mating calls noted. In dark places, eye large, legs long and strong like a hermit thrush. But is never on the ground - forages through the smaller twigs. Eats fruit. Rapid flight when chase each other through the branches. I have seen congregations of ten or a dozen birds, all clamoring loudly, and have never been able to figure out the meaning. *Warning call like V. red thr.*



Myzomela cardinalis

Saipan Common throughout, including the lake area, wherever there are large trees in open country or edges of forests. Also in trees projecting above the general forest level. Uses high and conspicuous perches such as dead ~~live~~ branches. Calling continually with high shrill whistles, of varying inflection. Also found in lower levels and scrubby forest growth. Males chase other species away from a feeding place - usually a poinciana tree in blossom. "Song" is just a loud wheezy call, a whistle. I don't know whether it actually is a song.

Tinian Only one seen in course of a month's activities on the island. This was collected. Giving typical calls from high perch in top of tree on hillside, of a pandanus type forest.

Guam Relatively more common around cleared and habitated areas, especially native villages. Probably on account of the planted fruit trees, and planted coconut trees. They seem to prefer to forage in the center of the coconut, where they probably get nectar or eat the flower parts, or perhaps even insects. However, I have not noted insects in stomachs. Very hard to approach. Males especially seem to have sort of a circuit around a selected series of widely separated palms. Often a female with the male - she flies first, then he joins her at the next tree. This bird is an isolationist. It has nothing to do with any other species.

Zosterops conspicillata

Saipan Abundant in ~~medium~~ tracts of medium sized trees with small leaves, particularly various kinds of mimosa, with compound leaves and small leaflets. To lesser extent also in Casuarina and the acacias. Such ideas of relative abundance are subjective, however, because these birds are very abundant throughout. They do not go much into actual marshes, and they stay out of big trees with large leaves such as bread-fruit. They feed almost entirely on large berries. However, their actions seem to be typical of the kinglet-type of insect hunting - in small twigs and leaf sprays. They hover in front of leaf sprays, they make short flights after insects sometimes. They are very agile and active, and appear to use the "rapid-peering" technique. Often seen in a nuthatch-like posture, with bill, body and tail in line. Always in flocks, of about 25. Not as compact as bush-tit flock - more straggling. But eventually, they catch up with each other. Keep in touch by a variety of siskin-like plaintive high calls. No song noted. A confusion chorus is heard when a kingfisher comes near. They come readily to squeaking, and are very tame. The most abundant species on Saipan.

Tinian More abundant than on Saipan, for the reason that Tinian is flatter, more open, and has less forest, and more planted acacia and casuarina. Flocks up to 50 individuals. Collected even out in sugar cane fields, where foraging within a foot of the ground. Nest seen in an acacia in April. Looked just like a bush-tit's nest, apparently had a hole on the side ~~near~~-the near the top. But couldn't tell because about 12 ft up.



Guam- On Tinian, more than anywhere else, the White-eye and Kingfisher come into close juxtaposition, primarily because they have almost identical habitats (ie the long lines of acacias, running through the fields). Consequently there is more friction between the two species noted here than elsewhere. Still haven't seen a kingfisher get one of them.

Guam A rare bird on Guam. Perhaps because relatively much less of the introduced (?) acacia and mimosa - in fact I didn't see any at all. Absolutely no Zosterops in the usual stands of pandanus jungle and banyan-like trees. The only place I found them was at the extreme north end of the island, where the richest variety of trees occurred (always close to the ocean). Here was found a type of tree which appears to be a prerequisite to the occurrence of Zosterops. It looks just like the Canyon Live Oak of California, and is about the only tree there that has small leaves, which is what Zosterops likes. In this limited area, they were fairly common in loose flocks of 4 to a dozen birds...

I feel that the notes of the Guam Zosterops are distinct from those of Saipan. There were none of the high siskin-like calls heard on Saipan. I believe a much more tremulous and subtle difference exists in the call notes of the Tinian birds as compared to Saipan.



Marshall, 1945

Species Accts

1.

Sterna albifrons

26 Sept Lake Susupe, Saipan In afternoon 2 of these were diving on the main deep body of the lake - catching fish, shot one. None seen in following 2 weeks.

Larus alba

26 Sept Lake Susupe, Saipan Always 4 or 5 pairs over L. for entire 2 lakes. Today they did not associate with Sterna, & I have never seen them dive for fish in the lake. They engage in manoeuvres a pair swooping etc & twisting <sup>on bowed wings</sup> always close together. They light in the Casuarina trees at margin & make a lot of noise. I 3055 saw one carrying a fish crosswise in its bill but the fish sank. However, generally saved the fish (held crosswise in bill) of same type from a bird on Tinian.

Varanus

27 Sept L. Susupe, Saipan 20' up on trunk of Casuarina tree edge lake. see cat. for stom contents.

1 Oct same place - a little fellow sitting on clump of Desmodium grass.

Pteropus

28 Sept L. Susupe, Saipan 1 hanging in Cas. tree





Marshall, 1945

g. Accts

at edge Lake.

11 Oct Mango, Timian About 500 hanging in  
a single large banyan. Coll. 10.  
Never seen again in that tree

18 Oct Mt. Lasso, Timian The same old colony  
(50-100) in trees by asphalt plant.  
Early a.m. lot of noise & screeching  
& flying around. Some were keeping  
not all in same tree but scattered  
all over hill. Others were climbing  
out on horiz branches to catch  
the rays of sunlight in which  
they would ~~head~~ & hang,  
facing the sun & shake out  
their wings.

Mesophaps

26 Sep-30 Oct Lake Susupe, Saipan Abundant all over  
L area in reeds, cane trees. Not in  
tules. Sing in choruses esp  
dawn & dusk. Very worn plumage in all.

Mesophaps

29 Sept  
#3066 L. Susupe, Saipan same old flock of  
about 25.

Anas onstadti L. Susupe, Saipan

26 Sept aft. Saw. 3 pairs flying over L. (2 got same time)

27 Sept Only 2 singles early a.m. flying.

28 Sept One in flight.

29 Sept None.



Marshall, 1945

3.

Sp. Auct.

30 Sept None in <sup>sm</sup> ponds by Chuan Kuma. Pair flushed from sm isolated pond tules NE Lake.

2 Oct Ponds NE of lake, tules fringed. AM. Saw 1 pair, then 4 went over re at isolated pool & shot one. the 3 flew past several times.

10 Oct Flock of about 8-10 flew over us in compact formation at N end L.

30 Oct 1 seen in flight finally shot it in isolated pool <sup>SE of lake</sup> as it flushed. All alone. L. many rest of day & covered all the major pools & the Lake & No Mallards. A max. of 12 possible same as (usually) 9 my independent counts for Tinian. Must go from island to island - same group vols.

see at pond at Tinian None seen at any time.

Spatula clypeata  
15 October L. Hagoi, Tinian Pair at largest lake - swimming in open water as gets from shore. I shot both - quickly skinned 1 for MVZ, the other for USNM. Both very emaciated probably blown in by typhoon of last week.

Gallinula  
26 Oct <sup>Marpo</sup> Tinian Dawn chorus of hooting. Recy to imitation. When light give the rasping note. Abundant in woods.



Marshall, 1945

sp. Acab

4.

The strange case of the disappearing Collocalia

11 Oct Marpo Valley at cliffs Timian. Flock of 50-100 seen. There all sort of mix. By date of Genelly's specimen there were only 2 yr. 2 day after that there were absolutely none not seen anywhere else on island. Must have gone to another island.

Myzomela

Oct Timian Fairly common in the wild wooded country Marpo & C coast where I couldn't go before because of fogs. Leery to imit. whistle.

Zoster

23 Oct Timian Coll 2 ad ♂s, one yellow, one grey. The yellow one was "singing" actually. Just an extended series of the usual tick-like calls.

Hirundo

Oct Timian Flock of a dozen or so usually together along cliffs and in farm co. where forage along the rows of acacia. Oct 13 were in. No ad. seen, altho Genelly & I have seen ad. in migration. (Jan & Mar). Apparently these in winter here. Seen daily probably same group.

Halcyon

26 Oct Marpo Cliff, Timian Several fighting - would grasp each other's bills & hang on loser would hang down on others bill - flapping & shrieking.



## PALAU

Pteropus

Peleliu, 1 & 2 November Fruit bats here begin to come out to forage in middle of afternoon, even on ~~any~~ sunny days. By late afternoon they are everywhere, flying around at low altitude over the trees, lighting in fruit trees and eating fruit. Often flushed at close range from low trees, fly off with large round fruit in mouth. Much more abundant here than Marianas. In feeding trees, very noisy, squabbling.

Koror, month of November Abundant. Although feed anywhere that fruit trees are available - even around camps and houses, greatly favor the trees out in the mangrove swamps. Especially the swamp at the north termination of the main Koror ridge of mountains. Many feeding by sunset amid perfect din of chattering. However, not all are out at this time, because just after sunset, they begin to fly in along this ridge, one by one in a steady stream. They fly along the top or near the top of the ridge and as they come to the termination of it, they half close the wings and make a dive directly down to the feeding trees in the swamp below. They dive at about a 45 degree angle, with great speed so that the wind makes a shrieking whistling sound thru their wings. They adroitly check their speed at the bottom of the dive at tree top level and make a circle or half circle back to a tree where they land by pitching forward, over the horizontal branch, grappling onto it with their feet on the way over the top. Most bats flush when approached within 30 or 40 yards, but many are very tame, and can be shot with the 22 aux. I am convinced that these latter are the young bats. Therefore to get adults, one should shoot them in flight. (When shot hanging, they generally remain hanging even though dead.)

I have many times heard and seen bats alight in low banana trees - halfway out on the larger horizontal leaves. They alight with a loud crash against the leaf, hang for a while. But I have not seen them feed on these trees. I have seen them light only 4 or 5 ft from the ground. They also like to alight the same way in palm fronds, from which they hang, swinging front and back, but I don't see them feed.

In the feeding trees at the edges of the swamps, bats are constantly alighting at the same point where one or two others are feeding. This always results in loud cries and the exit of one or all the bats.





PteropusKoror, November

These bats ~~see~~ do a lot of flying, day and night, apparently just for the fun of it. In evening, when most are diving over the 300 ft ridge to the swamps, others are flying generally in straight path for long distances and at great altitude. In daytime, several can generally be seen flying along or high above the ridge. On 19 November, a sunny day, at noon I ate lunch in a tree at top of the main ridge where I could watch for hawks. Bats were continually speeding past, very close to the top of the ridge, often in couples. Almost no wing-beats, just sailing, and at considerable speed. They would make a circuit so that the same bat would sail by every few minutes. Are very adept at this type of soaring. Silent in flight.

It was not until 2 December that I found any roosting in daytime. There was a colony of about 50 in a huge small-leaved tree near the top of the ridge in a very remote and wild forest south on the mountain near the lake. There was some noise and chattering, but most were hanging asleep. As it rained, some shook and fluttered their wings - either shaking the water off or taking a bath. (Same way the bats on Tinian shake their wings in the sunlight.)

Peleliu, 4, 5, 6 December Southeast part of island in area of radio transmitter. Same type of evening flights noted where at dusk the bats radiate out from some point to the south - (deep woods - where I looked for but found no roost) south, not an organized flight but single bats coming at high altitude every minute or so, and in same direction. By dusk they are flying low and alighting in fruit trees. 5 Dec shot a female with a suckling young. These two were colored alike - a beautiful deep chocolate mantle, with a few silver hairs. Another female taken same place, same time, had a taffy-colored mantle. (MVZ specimens). Male adults can be distinguished in flight by the pendant penis, and I shot two, but they fell out in the swamps. In the vial of ectoparasites from Peleliu, there were mites from the suckling bat only. The large tick-like 6-legged parasites are only from the adult bats. The little buff colored insects are from the backs of these "ticks", probably their young.

Noted also a few daytime on Babelthuap, and many, Arakabesan



Marshall, 1945

Palau

Emballonura

Koror, November Common in evenings near wooded ridges. Come out after sundown, but before Collocalia retires, so that for about 15 minutes, they are in the air together. Flight erratic, but I have not noticed a consistent direction in plunges from the straightaway flight in catching insects. On Koror, I hunted them at a road between a marsh and the ridge. They were all along this road in groups of 3-6 or more. Early in the evening they forage low - 15-30 ft off the ground. As it begins to get dark, they cut down their wandering and get to business in regular forage beats around certain large trees, generally near a open space. However at anytime two or more may take off in high, straight flight, pursuing each other. They keep foraging most of the night, because I have seen them in the woods on the ridge with the flashlight at all hours. They often fly close to the light out of curiosity the way bats do in the states. Tend to fly higher as it gets darker in the evening.

Arakabesan, 29 November An entirely different picture of the evening program obtains here. The bats came out in large groups from a wooded hill after sunset and flew high and stright along the shore over the abandoned town. It was not until nearly dark that they settled down to forageing in circuits around the larger trees, these near wooded hills.

Peleliu, 1 November. One seen at dusk at Hq 26th Mar. Not noted in my night hunting out by purple beach, where all birds were common, this in 1st week of December.

Rodents      trapping accounts      ALL KOROR

Koror

west

16 November 24 traps from camp ~~east~~ towards shore, 15 yd intervals, thru abandoned farms and gardens. Some set in old native thatched huts. Caught 7 R. exulans, some traps reset twice.

20 November, Koror Set 24 traps at ~~10~~ 10 yd intervals through woods on ne side main ridge. Set around rocks, caves, tree stumps, etc. Only 1 R. exulans.

25 November 1945, Koror : Set 24 rat traps baited as usual with rotten bacon. Around Hq buildings and barracks, and old jap piles of supplies. Caught two R. rattus, at the supply dump (although they took the bait from all traps set in the barracks. One Mus, barracks.



Marshall, 1945

d

## Palau

### Rodent Trapping Accounts

A few other nights, set a few traps in building where Marines complained of rats. Nothing but a few R. rattus. One night set the 24 traps out without making special sets in exulans territory and got nothing (27 Nov).

2 December, Koror Set out the 24 traps baited with stale bacon in abandoned and ruined farms and gardens away from present human occupation, near HQ. Caught 2 R. rattus - an adult in a junk pile near HQ, and an imm far out in the farms - the last trap out. This is my first record of a R. rattus taken far away from humans on this island. As for the rest of the traps, under bushes, near logs, grass at edge of banks, but always in open country. Got 13 exulans. Reset traps until midnight.

### Species Accounts of Rodents

November, Dec. Rattus rattus

Koror Common, to my knowledge only around quarters and mess halls and other buildings used by troops, and junk piles and stacks of Jap crates in the near vicinity of troops. They are bold feeders on candy and other edibles which the men always have in their rooms or tents. See above for only one noted away from humans. One seen in daytime at abandoned Jap Lookout 2 miles south on top of The main ridge. Ran under Gasoline Drum.

Mus musculus

Koror, November Taken only in quarters (one).

### Rattus exulans

Koror, 16 November, 20 November, 2 December. Although based on only 5 or six trapping nights, it seems safe to say that exulans is not found around the present human habitations, where the House rats may drive them out. They appear to be rare in natural wooded habitat - only one out of 24 traps on the side of the ridge in heavy jungle. However they are abundant along old garden walls, and in the tall grass around fallen logs, boulders, and banks, in open areas, such as abandoned gardens and farms. They do not move far for food because you can get three by resetting one trap, and another trap 10 yards away will remain untouched. Furthermore, the traps must be carefully set in favorable concealed places. On the 27th of November I got no exulans at all in traps through



## Palaus

Rattus exulans

Koror favorable farmland, but I didn't try to make sets, just plunked them down in the trail/ at regular intervals. The notable thing about exulans is the fact that you get two or three rats at a single set. Successive visitors to the single trap are not necessarily of opposite sex. Apparently they occur in small communities or groups.

On the evening of 2 December I set the traps and baited them about 6 times and caught all the exulans (13) by midnight. // 3 more got away. In the morning the traps were empty and untouched. Typical places of capture - all more than a quarter mile from human habitation: under bush in grass field, under bush at edge of field, under fallen thatch roof of native house now lying on ground and surrounded by grass, un dense grass beneath a bank, at base of tree surrounded by grass, at base of clump of cane next to ditch, under fallen log surrounded by grass in old garden, side of garden wall, etc.

Note that on 16 November most of the rats were ad males, and on the 2 Dec, most were ad females. These two areas were a mile apart, and in each I reset several times so that I should have gotten most of the rats present.





Marshall, 1945

from 1000 to 1000

## Pelecin

Pelecin 1-3 November, <sup>slight</sup> 7 Nov, 22-25 Nov, 4-6 Dec

Koror 3-6 November

~~Pelecin 7 November~~

Koror 7 November - 3 December <sup>Parrot</sup>

Ridge 18 Nov, 19 Nov, <sup>30 Nov</sup> 20 Nov, <sup>28 Nov</sup> 2 Dec

Zabellthnap: <sup>slingshot</sup> 13, 27 Nov airstrip, 29 Nov, 30 Nov N-W

Arakabesan: 26, 29 November

## Phaethon lepturus

Common over forests and sides of ridges everywhere. Hang around steep wooded ridges even where there are no cliffs. Often fly at tree top level with steady beats & tail undulating. More often seen than Gygis.

<sup>19 Nov.</sup> Koror: these birds sometimes gather over the main ridge and circle, uttering single <sup>staccato</sup> note "kip" with rasp in it, but sounding much like a Sterna call. This in groups of 3-5. Mostly sailing - no wingbeats.

Koror 2 Dec: One seen alighting in big tree in deep canyon near the lake.



Marshall, 1945

2.

Palau

Sterna fuscata  
Pelelin 7 Nov 2 seen <sup>(together)</sup> from LCM.  
Other Sterna also seen.

Gygis alba  
Noted throughout in woods but uncommon. Seen frequently only at Pelelin where same behavior inland as at Manamans. Often seen roosting at night by flashlight in trees on horiz branches.

Chous stolidus

Koror: One day morning a flock of 6 or 7 came over Koror - kept in formation. Are usually seen over the ocean near shore. Do much flying around the ridge at night - begin a little after sunset. All night the harsh cry can be heard along the top of the ridge - given by birds in flight.

Babelthrap 19 Nov. On hike up main mountain range saw these terns often - chasing each other along ridges (soaring) and uttering the



Marshall, 1945

3

Palau

Anous stolidus

very harsh rasping single note.  
On alighted on a horiz.  
branch of a tree at top of  
ridge - edge of a little clearing -  
about 20' up. Collected it. All alone.  
Call: a horrible long rasping "Guaaaaaak!"

Anous tenuirostris

Koror 3 Nov During ride up from  
Pelelin saw a flock of 100 ±  
~~flying~~ milling around low over  
water - apparently fishing. Single  
birds flying in low from  
all directions to join at  
the school of fish. (This was  
SW of Urukabesan).

Squatarola squatarola

Pelelin 3 November Flock at N.  
beach on sand spit. 30 or more.  
Mixed in with Turnstones, Curlews,  
Sandpipers. Not feeding - resting. Silent.

Pluvialis dominica

Pelelin 1 Nov - 10 Dec Noted around airfield.

Numenius phaeopus

Pelelin - always seen in mixed flocks



Marshall, 1945

4.

Palaemon

Numenius

resting on sand spits at north  
tip of island. Generally 3 or 4  
per flock of 50-100 Turnstones,  
plovers & sandpipers. Sometimes  
fly before the others do, then they  
keep to themselves & close  
together in flight to next  
patch of sand.

Koror & Pelelin Single birds  
met daily on roads or  
trails thru open country.

When they takeoff (by themselves  
or by being flushed) they make  
loud calls. One day an  
emaciated "weak indiv." was

caught on a road. At Pelelin,  
during a rainstorm one came  
outside the window of my  
lab and plucked grasshoppers  
out of a patch of grass next  
to the sidewalk. Found as  
commonly inland as Pluvialis,  
& ~~both of~~ and Actitis.  
Call: rapid succession of whistled cries.

Actitis hypoleucos

Pelelin Koror Solitary In flat areas - on roads  
of white sandy soil, esp. near puddles





Marshall, 1945

5

Palaus

Actitis hypoleucos

in these roads. A given indiv. seen at same spot in road several different days. Teeters, flies - spotted sandpipers. Call given when takes flight.

Once seen at shore of a lagoon on sand (Pelelin) - flushed, went in and over water & back to a twig sticking out of water near spot from which it had taken off.

Arenaria interpres

3 Nov Pelelin Is. & looks on no. sand spits  
seen under Whimble.

Phalacrocorax melanoleucus

Noted on Pelelin, Koror, Babelthap - sit upright - body almost vertical, head held high in tall dead mangroves or <sup>algae</sup> mangroves (salt). Pelelin - also perch in mangroves

6-10 ft above water. single or in pairs. At Pelelin saw one bathing in a road-side pond of fresh water inland another swimming in another sm. pond of fresh water.

2 perched on <sup>high</sup> diving platform in lagoon N end Pelelin. Few seen at Heron.

at Babelthap several seen in flight in open country vicinity of the bay (N-W).



March 11/45

6

Pelelin

Pluvialis intermedia

on 30 Nov. One seen in flight (weak straight)  
was brilliant shining white below,  
but the one collected from  
was more a greyish brown  
was a very young bird.

most common of Pelelin - often  
seen them in flight on high go.

Mesophaga intermedia

Novor Seen daily flock of about  
a dozen in farmland grassy  
open.

Demigretta

Pelelin Beach, mangrove lagoons, tide  
flats N end, <sup>1st</sup> ground totals:

White 1 or 2

late 4 or 5

White with black spots on back & wings <sup>in</sup>  
Watch a mottled one passing edge  
mangrove lagoon. kept out looking to  
& hunched up body horizontal.  
(Also seen at No. 1)

Querquedula ibis ?

Pelelin 2 Nov: 1 Seen beach N end standing  
on sand. White egg with black band; black  
with. (As I recall the eggs were light colored).



Marshall, 1945

7.

Palau

Nycticorax nycticorax

Koror, 27 November On old dirt and lined with grass & with many puddles. Central part of Koror.

Collected this specimen at night when drove up & saw it in headlights. Kept right on hunting grasshoppers. Perhaps this same indiv. as the one seen in tree at dusk & flew towards this road. One was seen and shot at at dusk on previous evening at this same spot in the road.

Nycticorax alcedonicus

Koror 2 ~~believe~~ saw a spotted one (im. or reddish brown with buff spots); flushed from roadside in mangrove swamp N. end in evening. Same place saw one uniformly reddish-brown on dorsal surface in daytime. No black noted on plumage.

Peter in December was hunting bats in a clearing in forest, E side, near lg. mangrove lagoon. 2 f's flew str. across clearing close together, & I shot them both. Almost dark.

The skeleton was found on grassy dune near N. sand flats.



Musshall, 1945

8.

Palm

Icthyophaga sinensis

Koror 3 Nov One seen in flight - I believe it was over grassy farmland.  
Wabellthnap 13 Nov One flew across the causeway in the mangrove swamp.

these are the only two I saw. Looked like sinensis. Very rare. (If they were common, but nocturnal, I would have seen them often.)

(Pandion haliaetus)

(Pelelie 23 Nov One seen by Doc Jenkins a good observer)

Accipiter (small)

Pelelie 2 Nov One flew across road & into dense mangrove forest just thru trees. Looked sort of like Sharp-shinned.  
Koror 3 Nov Shot at & missed one in evening. It was perched on top of bamboo in farm area.  
Several other days saw a pair soaring over the island in circles. Larger than Sharp-shinned Hawk.

Accipiter (large)

Koror seen several times - a pair soaring





Marshall 1945

7.

Falcon

Accipiter (large)

over high ridge also over central part of island. Looks like Yoshawk.  
Arakabesan 29 November Flushed one from a ravine where I was driving at evening. Saw it perched on a Pandanus bare limb on top of hill but it disappeared when I stalked it. Got a good look at it and noted its very large size, a large Yoshawk upright posture, long tail, rounded wings (in flight).

Buteo (medium)

Koror a pair seen over different days circling over main wooded high ridge. Looked like smallish Red-tail seen to the reddish-brown tail.

Megapodius laperouse

Koror 18 Nov On main ridge base on NE side a gentler slope with some accumulation of soil. Here <sup>(see p. 109)</sup> I heard a megapode & caught a glimpse of one ducking stealthily behind a bush. Call Cuk-cuk-cuk-cuk, cuk, cuk. Loud, staccato. At end - 3 cries, each downward inflection & each



Marshall, 1945

10.

Palau

Megapodius taborum

lower in pitch than preceding.

keer, keer, keer.

Complete call: 

We found diggings - i.e. scratched up places on the trail whenever there was a little soil or leaf mold, then we found a lot of tracks in some ~~fine~~ fine sand in the mouth of a cave. Some of these huge tracks led right into a small hole between sand & rock, but we could see nothing in it. Apparently it was a little tunnel leading to another part of the cave.

Koror 19 Nov Saw and shot at 2 - each at about the only 2 places where there was any short ground with soil along this long trip I took along the ridge to the lake. 1st was near top of ridge on a little level place between 2 paks. Much scratched up leaves on the trail. Missed this one. It didn't call, but flew off with powerful flight. I flushed the second from the ground at the edge of the lake. It lit half way up in a large tree being branch and I shot it. After it fell, another



Marshall, 1945

11.

Pulau

Megapodius layardi

called several times from the same spot. The first (above) had been walking with ease along the jagged top of a boulder.

Koror 28 November. Same ridge as above, this time back at the NE base.

Stopped to rest by a little valley (cleared) where there were some old up houses and saw a megapode 6' away on the other side of a rock from me. Again it called the ease with which they talk about the jagged rocks. Shot it with the 22 amp! 50 yds away and it flushed no more. Shot it with

the .410 amp as it walked along the trail. Most disappointed. (This was the spot where the cage was where we first saw them. very heavy dark jungle.) At the

next little valley, I flushed a little bird from the ground.

It flew rapidly to a dense tree where I shot it as it went like this:



off hand and. It was a baby megapode - all by itself and capable of strong flight. Among the 1st



Marshall, 1945

12.

Palau

Rhegopodius laparouse

group, noted that one bird if  
give the ... in ...  
with the other ...  
of a ... bird.

Koror 2 Dec. Same ridge this time  
in alleys of dense jungle  
out toward the lake. Heard  
several & shot at one. It was  
when I arrived at the  
place where it was shot. Found  
a lot of holes in the rock  
(made by #6 shot) and blood, but  
no bird! Here again I marvelled  
at the way these birds work  
than the rocks. From here I  
shot this bird looked as if  
it was walking along a straight  
line perfect pace & steady movement  
as if waving palm a little  
in front of it on the side of  
the ravine. When I reached the  
spot I found it was in some  
more jagged rocks steep, & with  
holes & tunnels everywhere. Same  
thing noted on calls in the past  
can be given alone, or with by  
2 separate birds.

Summary for Koror: only on the





Marshall, 1945

Palau

Note: not seen  
on mt. Babelthuap  
1 & jungle 13  
29 Nov.

Megapodius laperouse

one main ridge composed of steep slopes, sharp descents, & narrow dark valleys all with heavy jungle with a few trees, vines & undergrowth. Brush in spots. Flat benches were at bottoms of valleys, as between peaks. However, there were Megapodes or signs in all these flat benches - here a little soil & humus & leaves will accumulate (all the soil is porous rock). Seen scratching in soil with leaves all upturned. Like pig rooting.

This ridge is separated from the one on the N end Koror by a narrow lagoon. The N ridge is similar in habitat but is full of up houses & installations no longer inhabited, but no Megapodes there. However Gallinula occurs on both. Calling only on the one with the Megapodes.

Palau 5 Dec One seen along range on trail among rocks under over dense jungle left (Purple Beach) Another heard. Similar habitat as on Koror



Marshall, 1945

14.

Palau

Gallus gallus

Palau Common wild, but frequently seen along roadsides (not domestic). Family groups seen daily. These chickens are of variable coloration as probably largely interbred with domestic.

Koror Head in titled part of island but not seen. Heard on main ridge where the Meapodes were seen all the day but from the most remote & steepest mountain sides. Never seen. These birds were so wild that I'm sure they must be original native stock. Never even got a look at one, although often heard them. Shot one chick. It flew from the trail on the top of the razor backed ridge into a bush where I was. It with broadside of .22 shot. Just a chick but could fly perfectly. (# 3288 19 Nov)

Gallus philippensis

Common on all islands. Most seen usually running across roads at edge



Marshall, 1945

15.

Ptilinopus  
Rallus tiligensis

mangrove swamps, or on roads  
then abandoned farm land. Flushed  
in dense grass of old farms (Babel)  
roadside paddies (Pelelin, Chakabesan),  
<sup>road</sup> edge mangrove swamps (Koror), road  
then extensive dry flat grassland  
(NE corner Koror). Most abundant  
at Chakabesan where in  
evening of 29 November I  
heard dozens of them often very  
close with from grasslands of  
abandoned farms & gardens.  
Call high sharp & long  
"kreek, kreek, kreek" with  
the resonance one ~~family~~ <sup>birds</sup>  
with ~~marsh~~ - birds in the  
states. Chakabesan is deserted.  
However they are almost as  
abundant in the settled part  
of the bit. coast area in Koror.  
On Babelthnap were very  
numerous in meadows in open  
country near the airstrip where  
the ground is either bare or  
with low grass and ferns. They  
give a few squeaks, then put their  
heads down and scort. In ordinary  
foraging, head goes back & forth with



Manila, 1945

16

Vai

Kalhu philippensis

each step. In running away, it is unched down & kept tall. I never saw one fly. I think there are gone on the Koror side (thought I heard them) in natural jungle habitat but if so, it is as common as in out over areas. The cry can best be described as exceedingly "large". 27 Nov. Koror just as it was getting dark, saw a little black rail at the side of an old road thru dense cane & grass. It scuttled off when finally realized it was a bird. Could have been a young rail, or another species.

Gallinula chloropus

Pelelin 24 Nov #3292 Pickup on road at Purple Beach Chapel (dry area but within 50 yds of mangrove lagoon) is my only record.

(Porphyrio porphyrio) (Seabeck)

(Pelelin Noted by Dr. Jenkins a good observer. I didn't get around to investigating the brackish marshes on the W side of Pelelin - which I should have done. Very different from the mangrove lagoons.)





Marshall, 1945-

17.

Puleu

Ptilinopus porphyraceus

Abundant but hard to see - very secretive. 2 kinds of habitat: Natural jungle on ridges - stays high in largest (fig) trees - Koror ridge, Mts of Babelthuap, undisturbed patch of natural forest on Pelelin near Purple Beach; 2nd type Koror in a tree resembling a poplar which grows in mangrove lagoons. Where these lagoons are near the wooded ridge the doves fly back & forth between the 2 habitats but they are common in places where these "poplars" are far from any suitable jungle habitat. Identical habitat setup for the Pteropus and strangely the Otus ~~separately~~ the other pigeons don't go into these trees, but Ptilinopus & the bats feed in them extensively.

Flight is bullet-like straight & swift. Retreat unnoticed from the back of a tree when you approach. Are seen singly pairs or small groups. A dozen or more congregate around one of the 5 or 6 huge figs on the N Koror ridge.



Marshall, 1945

18.

Pulau

*Ptilinopus porphyreus*

Also very common in mixed woods in semi-marsh land on NE side Koror. Seen to advantage from summit of main ridge.

Single birds make long flights along the side of ridge.

In the large fig mentioned above, the birds stay very high 100 ft or more in the crown. They disappear as soon as they alight a very baffling & often repeated trick done by walking quietly along a branch away from the point of landing. Concealing coloration developed to an extreme here, & they ~~do stay in the lighter green trees.~~ An alternative is when they perch motionless for 15 min or more upon alighting. In either case it's difficult to locate them. You will see one enter a tree and in looking for it you may flush 5 or 6. When they are feeding at a great height in the fig, they do not freeze, and can be seen walking along branches & shaking twigs as they pluck fruits. The call is distinctive from that



Marshall, 1995

19.

~~Pulau~~

*Ptilinopus* *pyrrhorrhynchus*

of *roseicapillus* by its occasional  
hesitations\* and the absence of  
a speed-up to a roll in the middle  
of the sequence:

coo, coo, coo, coo u\*, coo, coo-u\*,  
(now descending in pitch) u, u u, u, u.

All the notes are of same quality,  
and inflection (none of the rising  
inflection in terminal notes that  
*rosei* has). All have downward  
inflection: ~ ~ ~ ~ ~

These calls are <sup>heard</sup> <sup>not a</sup> <sup>single</sup> <sup>note</sup> <sup>all</sup> <sup>day</sup>  
and night. The first night on  
Koror I had a bad time  
figuring out the out & catcalls  
because of these notes, which  
I certainly didn't expect to hear.

One will call then all the birds  
roosting in that neighborhood will take it  
up in turn or in choruses! Each  
calls only once (i.e. one full sequence). I could start  
them off at night by giving imitated  
call. I didn't see any bang, flutter or small  
twips the <sup>way</sup> <sup>birds</sup> <sup>do</sup>. Cut the first whole <sup>flight</sup> <sup>heaps</sup> <sup>to</sup> <sup>lead</sup> <sup>of</sup> <sup>tree</sup> <sup>top</sup>.

You hear dozens for each one seen.  
All islands. Mostly natural timber, but  
spills out into cleared areas where big trees.



PalauPtilinopus porphyreus

Flocking: very haphazard & only due to circumstance of being attracted to a good feeding tree such as the giant fig. For example: this being the largest feeding tree, it had the greatest number of doves in it.

- No interrelations noted with Luscinia. Both are very common, and absolutely independent of each other.

Luscinia oceanica

All islands - found wherever heavy natural forest occurs - ideal locations: the main ridge of Koror & the <sup>mountain</sup> ranges of Babelthap. One seen at camp on Koror, but generally stick close to the wooded slopes. Not flocking at this season - would spread out thru timber - most often tend to occur at tops of ridges particularly for "singing." Although not flocks as many individuals present that one <sup>is</sup> ~~can~~ always within sight or hearing. Do not call at night. Generally perch high in trees, and in the larger trees. Eat fruit. <sup>1</sup> on Koror.





Marshall, 1145

21

Pulau

Ducula oceanica

have repeatedly seen them flutter and hang upside-down on little twigs while they gobble fast like large chickens. Birds which call are often converted in police flock then on with under the and often don't see them at all. These are the old birds which are very & if you do not know you see they have the knob on bill the young ones are large & dark hence not often with the. Restricted to the low level - don't go into mangrove areas like *Streptopelia*. Very abundant - like to claim to like them for food.

Call is horrible enough, but not as irritating as *Chrysomitris*. Reminds me of *Salicaria* barkin. Harsh & rasping & deep-throated:

"Arrooo, arrooo, arrooo, arrooo, aroo"  
3 - 7 notes each a trifle lower in pitch & intensity than preceding, and each shorter than preceding. When very close, a superimposed tone is heard with rising inflection, high pitched up similar to *Hyla* locust:  
kreek kreek kreek  
Note: large birds molted whole - see *Stomachus*.  
never seen on the ground.

Marshall, 1945

63.

## Pular

### Small gecko

Notes: ~~Common~~. Nocturnal. arboreal,  
but only to be in bushes.  
Must spend day in holes in  
rocks, because out in the  
jungle of the ridge, they begin  
calling late in afternoon even  
before sunset. Call, heard  
all in the evening is a  
gurgling sound with a few chirps  
interspersed & sounds like  
touch noises. Found in  
buildings common only. Strictly  
nocturnal foraging. Smooth skin.

~~Notes~~ (origin. Small geckos  
have a sharp hump - given in  
undulating waves.) Can  
change color from pale buff  
to blotchy black according to  
color of wood on which they  
crawl. Can move quickly.

Marshall, 1995

Vilam

Linella oceanica

Another call heard less frequently,  
is a soft plain sound - almost hollow  
note, sometimes a little rough.

Several birds seemed to use about  
same pitch for the "p" in the harsh  
call. All in same pitch, however.

Gallicolumba canifrons

Koror & Pilelin

Identical habitat  
and distr. as Megapodius also  
about same numbers - except  
with these I never saw more than  
one at a time. This seems  
that they can be dependent on to  
occur in the habitat but you  
can go a long way from it  
without seeing any. One reason is  
that you don't see them on the  
ground unless you startle one into  
flight & they flush only when  
you are within 2 or 4 m. They  
fly very swiftly, with a clap of  
wings, in flight a few yards  
away and walk along gracefully,  
picking up seeds & fruit. (Red ink  
back & forth with steps.) Walk very  
rapidly by, to take small things.  
One collected along a log in a pit

Journal, 1945

62.

Wm

birds

Paul Jones

Never common - stays high in trees  
single. Bright red expensive.  
Vicious with a & clean blood.  
as far as I know no estimate.  
from some of my branches.

Smith, August. Also 1 abandoned  
atric, but in woods.

The rain which came after  
 midnight and the heavy  
 fog in the morning were  
 the worst ever in  
 the history of the city.

...and the ... ..

killed many at night high  
 in trees. (all one 5 December.  
 ) had shot a bat from this  
 tree & was snapping it up by  
 flashlight when I heard a crash  
 & this bird bounded down to  
 the ground next to me &  
 stood watching me - on his  
 hind legs, one arm free the  
 other holding onto a little leaf  
 for support. started to crawl  
 away & I swatted him with  
 a magazine. Had black spots.

Marshall, 1945

23.

Indian

Gallinula crissalis

normal pace. In this region  
as with the pygmy and  
with the other birds of the  
entire area if you are on a forest  
road. Like the Pygmy is  
restricted to the narrow  
of canyons and the soil is  
soil. Less than 10 ft. of each  
can during the day. None in  
the morning and then on  
about 10 ft. with each of the  
birds. flushed some once in a while.  
Often just stand <sup>quietly</sup> behind a tree  
base with a few feet a couple  
this way. I got one male  
by imitating hoots. It came  
settling up a little while to  
me. Got two more by  
tracking them down while they  
were perched in trees 10 ft  
above ground & in dense forest  
hooting. They answer hoots. They  
call more frequently when you  
answer them. Hoot is very faint  
you are close to them when you hear it.  
Series of upward inflected notes 7 or 8 of the  
typical dove pitch & quality. Note the  
murmur and the of panthomura.

Marshall, 1943

61.

Palau  
Lizards

Yellow-green animal Lizard

All islands. Abundant in open forest - live sunlight on lower bushes & trees. Most often seen in cultivated farm area - but only where trees. Strictly arboreal. A rapid climber.

Spiders  
Spiders - tawny & orange colored. <sup>small 2 due Koro</sup> <sup>bridge hot-up</sup> <sup>as a brilliant bronze</sup> <sup>end which I could</sup> <sup>shoot.</sup>  
species are common, & found plentifully in the ridge jungle. On ground and rocks.

Most needed Skink (?), which is common with the light blue Skink (Skink), & which under rocks is common around bushes, trees & fallen rocks, Koro. On ground.

Large nocturnal Lizard Recurvans lanceolatus, but is much larger, rare. I saw one in grass at night, and caught the one specimen (largest in coll. except Yuckos) in a snare trap under bush at side of garden in morning 25 Nov. Koro. On ground.

Marshall, 1945

24.

Palau

Calliopea curvirostris

On Uelelin was a trail near Temple  
Beach Chapel & I would flush a  
dove from a certain dense tree  
every time I went past. It  
often hooted there & a cry could  
be heard 100 yds away. These 2  
birds then had very definite  
hooting periods.

Merulius were numerous at  
Uelelin (at this time I was not  
troubled) - but was not a ridge. Also  
seen at the north edge of forest.  
When walking, sits on high wire  
surrounded by dense forest  
10 or 20 ft up.

This charming dove fascinated me  
more than any other bird of the Pacific.  
It is exceedingly graceful in its  
movements and the soft cooing together  
with the rapidly uttered soft make  
each glimpse of it a treat. It  
occupies a niche shared only with the  
agapode and land crab.

Caloenas nicobarica

Uelelin One seen in flight along bloody nose trail.  
Slow, steady wing-strokes. Nov 19 Nov. One  
flushed from trail top of knife ridge. Heavy jungle.

Marshall, 1945

60.

## Fulcan

### Whip Snake

was gliding among the boulders  
in this dense jungle situation.  
Cold damp. Moss growing on rocks.  
Much bigger & different color than  
1<sup>st</sup> 2. Same species?

### Boa ? (square nose bronze color)

Koro: collected then  
I put down & put my feet  
on it. Didn't see it but Koro  
Jenkins did & we caught it.  
This was on a rock ledge in  
sandy jungle on N end little  
Koro ridge.

### Cypholepis

Koro: One seen when in  
bottom of pit in sandy brown soil  
one night. Rapid movement &  
disappeared in a few seconds.  
(I had stumbled into this pit  
left deep in the middle of a Jay  
garden. Late at night while  
searching for a Whipoorwill I  
had shot.)



March 4, 1945

25.

~~Palau~~

Cacatua dussumieri

Koror 19 November. Flock of 15 at the lake deep in the ridge jungle. I shot a tree then until I fired at a mango tree, when they all began to quack. (Can't be imitated, a quack & whistle, very soft. See J. Moore). Not seen since. I shot a bird at the same time. I shot the flock of 15 and 5 others. It flew across the lake on a low level, then to the other side flying in close formation, & quacking high over me. It was heard to be at least. It went into a couple of mango trees toward dusk. They seem to roost in large trees. Too dark to see them.

Koror - The Valley N. of lake. Scattered in groups of 5. Could hear some to be by whistling or quacking but couldn't see them. They were placed. He was heard stay in a given place for 15 min. or more without moving. Especially quiet.

Koror - Lac. Morning. Some fly to mango of coconut palms from mango & banana. & eat or feed & begin to eat entire flowers. It flew & landed on a branch of a tree. It took a bit as it picked up a bit of fruit or leaf. This bird was all alone, and I shot it.

Nov. 1st, 1945

59.

Can

Tree frog

Calls only at night. Found among  
jagged rocks under brush. <sup>rocky</sup> Dry ground.  
Abundant everywhere.  
"con-rick"

Reptiles

No lizards with me, of them on  
near ridge. Numbers of crocodiles  
in inland lagoon, Pabeknap.

Snakes

Whip snake: I saw 3  
found 1st in under base ridge went  
into a bunch of sandalwood stump  
or under itself under the  
dense foliage & trip very  
quickly. Looked like a lead grey  
darker above. 2 ft long.  
Found 2nd in that grass roadside  
base of river ridge. Very swift -  
slipped off into brush. A cool  
damp dark place like the 1st.  
Found 3rd collected same size & color as above.  
Noted construction  
back of head - very narrow neck  
& slender long tail.  
Found 4th collected: Deep Valley hidden  
in cuts of main ridge. This snake

PuauCuculus

Koror 3 Nov One flew into tree at 5<sup>th</sup> Bn. Hq.  
 Seemed to be slate blue above barred neck &  
 white below with chestnut or rufous  
 color somewhere apparently on throat or  
 chest. Narrow pointed wing, long tail,  
 rigid straight light. Seen several  
 evenings in same area where I was  
 watching bats at N. edge ridge. It  
 would fly over top of ridge & enter  
 a tree on the top, a few minutes later  
 would dash in & disappear over the  
 ridge. Must have nested up there.

Otus podargius (Podargus)

Koror & Pelelin Habitat: Same as Ptilinopus (a) Natural  
 jungle (ridges on Koror, intact patch of forest near  
 Purple Beach, Pelelin), (b) "Pogon" trees in forested  
 mangrove lagoons (these trees 20-30 ft high &  
 form an open forest canopy over the beach,  
 or mud flats. Individual pairs or single birds  
 based in the natural habitat (i.e. where it is,  
 will only out into adjacent cultivated land  
 where there are clumps of trees & it nest  
 from P. trees, never, or at least, then  
 100 yds from natural forest. In many  
 cases the pairs in the "pogon" trees are  
 growing from a bare ground in the area,  
 but some pairs will also dig for it

March 14, 1945

57.

Pulau

Souchura

so far it 2024 in a shot.

Sometimes they feed on bare  
piled ground. But more  
around just sit & pick up  
seeds. Fly to a different patching  
bush or tree each time they are  
flushed. Fly at about 25  
yds when feeding, but very tame  
when perched.

Undulating flight like  
goldfinches do a lot of circling  
& recon before settling down.  
If undisturbed, more & more  
groups come in to feed at the  
same spot. This is very  
peculiar & noticeable "flocking  
within the flock" - cliques,  
or clubs.

I thought I was following  
a flock of 4 birds trailed them  
until they settled in a far part  
of the field. As I walked up  
a 2<sup>nd</sup> flock of 8 came in and  
joined them on a direct flight.  
When I got there, I flushed  
about 16 birds!

In nesting trees, sit perfectly  
till occasionally give a note or two. Most calling  
is during flight.

Marshall, 1945

Pulau

(1st polaris)

in the lagoon where there is 4 ft or more  
of contin. water at low tide. Nitch:  
arboreal (but no stomach contents in cat.)  
in higher parts of trees mostly in  
solitary pairs, single young, but  
birds occasionally call from low trees in  
open. One call at Vauvau from foliage a series  
of bush about 12' up. Stay pretty well  
concealed in higher dense foliage. Birds  
can hear because of this. Series in the  
"upland" area they are not from  
the low territories: Well defined  
(except for the birds to generally  
in the low area and not to the  
because in the low area, I have to find  
them - hence the "upland" series). Most  
of time remain in the low area on  
ridge tops. In lagoon area  
informative to each. A pair with  
well-defined terr. guards at night  
100 ft radius. In some cases  
Along one trap line in the ridge & passed  
them 3 terr. (pairs) in 100 yds. Got off  
from the ridge & can hear us  
as 6 pairs hooting at once & not  
spread along ridge. Ridge here is  
enough so that no terr. is visible  
above another. Each pair, say, has a 100 ft

Marshall, 1795

57.

Palau  
Lonchura

Babelthrap 30 November One farm as  
a ea N canaway flat ground, short  
grass human habitations & farmers  
all around. Here were about  
50 of these birds organized into  
several flocks. They were there  
morning & afternoon & coll.  
12 of them & rest about as  
many more because of losing  
them in the grass if they flew  
after being hit also something  
(rats?) was eating them. Once  
when I shot a or 4 with one heavy  
charge, all I found was feathers.  
Another time I shot one with  
1/2 load, as I was deep & found  
blood & a pile of feathers!  
They fed exclusively in the grass -  
perch silently in a small tree a  
while, then fly down to the grass  
or fly or more may circle  
around a while area before landing -  
utter a slight faint "tsip" note  
then alight on grass blade, &  
soon all slip down to the  
ground & are lost from view. They  
fed very close together all brushed  
up also perch that way in the trees

March 4, 1947

18.

Ptilin

Itus podagrinus

strip from one to top of ridge & in added  
length of a few inches - perches  
out in the grass within 100 ft  
one of ridge. Do not respond to  
imitated notes unless in middle of  
terr (usually in grass) & then  
come out for a while. Sometimes  
will decoy to top of ridge, typical of  
all at end of ridge but are  
usually merchants in and out of  
our view. Does it land near. One time  
did decoy a bird into terr. In part  
Abundance terr are more common & in  
meets - pairs will have a series of  
song trees using their both habitats still  
about 100 ft apart. Abundance: as  
indicated pairs per 100 ft ridge. Sight  
of 14 Mar. moonlight wind took pair take  
to end of main ridge & in valleys  
& ridges and about 15 ft pairs in  
very common always in this hearing  
small pairs. (Note: On the <sup>main</sup> ridge) <sup>Opposite of</sup>  
estimate 6 pairs on NE slope 6 on the  
opposite, 6 or 6 on pr. in surrounding  
region. About 4 pairs in that area at main.  
(about 100 ft the indicated, the pair is  
of the line it). Time of activity: Certain pairs  
make one series of notes shortly after sunset,

*Rukia palmerensis*

constant loud <sup>loud</sup> chirping notes. A very active, noisy, bustling bird. Favours shot-up woods where vines drape the dead trees to a great height.

Song: Very high-pitched canary-like whistles & trills. The trills continue as a background all during the whistled notes so that a single bird sounds like several singing at once.

The open whistles of descending inflection "teen, teen, teen" have a strained, strained quality as if they are being squeezed out & the bird is in agony. After a series of these (without trill) he goes into a long trill that begins somehow, then the upward inflected whistles with trill intercurrent. This song is like no other bird I've heard. It has this remarkable orgiastic, hectic quality.



Marshall, 1945

29.

*Colinus*

*Otus podiceps*

the same pair as this from the same  
tree each morning. The majority begin  
when it's getting <sup>lightly</sup> dark & keep it up  
all night the calling is frequently  
after the first cycle hours. Early calling:  
one pair at little N Kern ridge, 1 pr. +  
Peletia. Voice: Call about every 15 min  
(1<sup>st</sup> part of few hours of evening). I seems  
to be part of a very set series of  
doings & if series is interrupted bird  
will wait another 10-15 min & start  
over again, in the following exceptional case  
shows: Heard the CT of a pair (heard on ridge)  
calling from tree edge corner. I didn't come  
in & call was lost. I figured he would  
stay there some time & go in & see if he  
could occupy. In 10 min he came a few  
shuffled notes went again 10 min, then  
began regular series & continued up to end  
him & he stopped in middle of series.

[Therefore would still remain] I shot at  
a movement in the leaves (could't  
hear him) & scared him away. This is  
in contrast <sup>(due to interruptions)</sup> to the established mode of  
conduct: Call is series of notes lasting  
2-3 minutes consisting of rise to climax  
in 1 1/2 2 1/2 min, definite climax for 10-15 min,  
then tapering off for 15-25 sec.

Sinukia palanensis

Palau only. Abundant & very  
 conspicuous because of loud singing  
 & chattering calls. One of these  
 chatters is similar to Pseumathia  
 (note heard in Pseumathia) hence  
 some confusion. Birds noisy  
 & constantly pursuing each other  
 in groups of 2 or 4 the rule.  
 Singing all day long from interior  
 crown of large dense trees,  
 occasionally from top twig, or  
 bare branch. Chase startings  
 away of kingfishers away from  
 this tree. More about -  
 much flying out in open.  
 Sing from one tree for a while -  
 then gather in neighboring  
 trees & horns ensues - then all  
 tear off into the low vine  
 tangles, chatter, and disappear.  
 15 min to 1/2 later another burst  
 of singing joined by all local  
 males - this time from different  
 groups of trees. ∴ hard to see any  
 territoriality. Foraging down ground  
 in vine tangles on the shot-up stumps  
 & crowns of smaller trees.  
 frequently 2 or more birds together.

Marshall, 1945

30

Puleau

Stus goddardianus

The "tapering off" is given in flight as the ♂ flies to a new perch and the ♀ joins in at the climax of the ♂ - giving him the desired reaction, and the "tapering off" is part of the climax stage: consists of a descent. ~~consisting of~~

Call of ♂: staccato whistled cry sounds just like gambelii truncatellus - i.e. not mellow pure tone like "gambelii" but a sharp "quirt", longer interval than former & often irreg. intervals 1 sec or  $1\frac{1}{2}$  - 2 sec in rise to climax, more rapid at climax, + rise and tapering off. Rise to climax: quality as above, all same pitch but may start low & mellow & rise to just as high tone in a few sec then the extended series. Loud climax interval changes to a softer, lower, series, to other pause etc.

Climax: sharpest, loudest & highest double notes 1<sup>st</sup> a minor third above 2<sup>nd</sup>, each phrase given in 1 sec interval at peak of climax just before flight. "Tapering off": single notes in ordinary spacing but series descending in pitch & becoming softer, low, and mellow; last few return to the double (of the climax) but at the end soft low brief.

Call of ♀ Same thing, but 1<sup>st</sup> 2 parts compressed

March 1945

54.

Palam  
Zosterops cinerea

Abundant throughout - the most common bird whenever large trees occur - especially the mangrove forest. Small flocks in open country. flocks of 25-50 in jungle. swift thru tops of trees. Pairs or small groups everywhere also. In flight over mangroves, swamps, etc. Strong swift flight in open. Sometimes fly very high & for long distances - very different in this one respect from conspicillata. Also different in foraging the mangrove forest & wide trees. Otherwise they are just like conspicillata of again with calls resembling it. Calls however sweeter than the latter - higher & louder & lower pitched than Palam conspicillata. Cadence same.

Cannonsity can decoy them very close with squeaks. They are very tame & very noisy. Forage in interior of crown foliage.

Marshall, 1945

21

Pulau

Otus podangus

so that entire tapering off & last pt. of  
climax is given (but at in season)  
as ♂. Lower in pitch and mellow tone,  
breathy at the last.

♂: ----- (longer) -----

♀: -----

I haven't given by collecting I have call &  
♀ which was giving full sequence alone  
that it was a ♂ but was out of terr.  
perhaps unattached ♀. I conclude ♀  
either unattached or separated by 100 ds  
from ♂ will give the ♂ sequence but  
at a lower pitch & more mellow.

The flight to new ~~terr~~ perch during  
taper-off is generally to 50 yds. Often  
both birds fly to other tree. 15 min.  
later they will call from a perch  
near where the last sounds were given in  
flight.

I have observed a close parallel to this  
performance in Otus acio at Altadena  
which culminates in ♂ & ♀ finishing a duet  
at the same tree (starting out from different  
tree but no recall, it is the ♀ which  
joins the ♂ who stays the whole time in  
one perch. 1<sup>st</sup> part is the "bouncing ball" call,  
2<sup>nd</sup> pt (duet) is the double trill.]

Eyes brown white.

Manila, 1945

53.

Pulau

Zosterops conspurcator

Babelthrap 21 November Airstrip:

~~common~~ in the rolling hills  
partially forested (indgrowth no  
big trees) partially covered with  
luxuriant fern growth. Saw  
2 flocks each about dozen  
indiv. in a patch of sm trees  
in the fern area, other in  
dense patch woods side of main.  
Further was associated with  
cinerea.

Most common at Babel. but  
not as numerous as Saigam  
of Manila.

- flocks compact forage in  
sm. other foliage. Constant  
cawing to keep members of flock  
in contact.

voice. Very distinct from Saigam.

It has a rough "chitp chitp" like Engl. Sparrow  
(Saigam) but a high (very high pitched)  
tee-dee-dee, tee-dee a clear whistle  
as high as I can whistle. This call  
has notes from song of Mt. Chickadee  
tee-dee, tee-dee, tee-dee-dee-dee. No  
song heard. Differs from cinerea only  
in clear tone & higher pitch.

PalauCaprimulgus indicus

Habitat: Same as Ptilinopus & Otus on Koror & Kellelin. (jungle & "poplars" of mangrove lagoon or lagoons where there are large trees.) Differ from Otus in larger forage area. In middle of night, individuals can be shined & induced to call in big trees in unthicketed areas far from home habitat. ~~More com.~~ Prefers the dense jungle, however. Abundance: Not calling much at this season some evenings hear none, is hard to estimate, but seem to be spaced out about same as Otus, perhaps fewer, but do congregate 2, 3, or 4 together esp. in highest trees. Not found in same place successive nights numbers more. One night there were 5 or 6 about a huge tree on N ridge Koror (Ptilinopus tree). They were at the extreme top of it & were giving the incessant rolling notes (steadily no set up or pause for minutes at a time). Usually found singly & early call. Most calls are given in flight - more almost always " " " " "Hammer-beat call" given stationary low tree, top part of trees, or (1) "stake or 1" from ground. Indiv. shined at night rarely because hawk about in dense forest.

March 1945

52.

Pulem

Zosterops conjunctata

into little bushes or a spring.

One day in some settled farm country, came on a flock of about 50 - at first one with 19. flock of cinerea but cinerea went on ahead with both

sp. followed same forage circuit. took about hr to get back where started a patch of large trees resembling <sup>cannon</sup> <sup>live oaks</sup> out in the lagoon. When fly across field

flock is very compact - all within a couple yds of each other & they go down 3-6' up out to series of trees & drift along them foliage stragglers trail along

in little bushes & weeds in the fields. Flock spent most time in patch of dense tall brush & vines. Much noise. Cinerea always farther ahead. When they get

back to the trees in the lagoon they become quiet & just stayed there at least  $\frac{1}{2}$  hr until I left. 2nd flock of 20+ in

grove sm trees next lagoon  $\frac{1}{4}$  mi away from 1st flock.



Muskegon, 1914.

33

Parula

*Caprimulgus indians*

These birds when quiet are perching  
fly-catcher fashion. Sit on exposed bare  
twig, fly out 25 yds or more & return  
(or more to next tree if in green co.)  
When flushed from perch give a  
more "rump, rump" (Mays)  
"Hammer beat call" is harsh whistle  
of downward inflection. Tacatto even series,  
2 or 3 perched. This, in the rare times  
when the birds were really abundant, or  
reminiscent of breeding season\* develops  
into the interminable roll which  
is mellow. [\* Perhaps I'm dealing with  
2 forms: evident which is uncommon &  
gives roll, winter which gives  
rider & gives the less constant calls.  
Eye shine red large. Flight, slow  
to follow with flashlight. The hammerbeat  
call has a terrific warble, rarely is  
loud & percussive. Rolling call  
rarely heard. Generally several birds  
to the high in highest tree. Some  
evenings much more calling than others.  
Favorable evening at dusk: birds  
chasing each other around & around  
dense trees uttering the "rump"  
note. Actually a single-syllable  
rasp note.

Marshall, 1945

51.

Pulau

Zosterops conspicillata

Pelekin rare or absent - Thought I heard a flock on 5 Dec.

1. r. r. rare. 1 Flock of about 20 birds near the garden at Bn HQ several times a day. <sup>Without cinerea</sup> Foraged in the garden the planted garden trees - small sand bushes & smaller trees.

1. Flock this as end of Nov.

Another flock seen in mangroves of edge lagoon NE end Koror. Shot 4 14 Nov all from same mangrove(?) foraging in the little leaves up crown foliage.

1 Flock of 15-30 in fine-leaved trees on top of main Koror ridge -

same place 19 Nov & 2 Dec.

~~1~~ Without cinerea. 28 Nov.

Another flock in large trees over the water on E side ridge where it drops str. into ocean lagoon. Heavy jungle in these last 2 places.

There was a flock of cinerea there but the 2 sp. kept separate.

Chalcophaps indica Common in cultivated or 2nd growth areas. Not noted in forests on the mts.

13 Nov. 5 or 6 were part of a flock of cinerea in 2nd growth timber nr. airstrip.

Small troupes became separated from cinerea & acted as unit. Came to edge woods & down

PulauCollocalia inexpectata

Abundant <sup>at islands</sup> ~~throughout~~ but not evenly  
 distr. Always some along crest of  
 ridges. Not in jungle. Small groups or  
 flocks of a dozen favor certain spots  
 where they are seen daily: a  
 certain populated road intersection  
 on Havelthnap, a road cut in  
 farm co. on Koror, road between  
 ridge & lagoon N end Koror ridge (the  
 little ridge). <sup>favor</sup> ~~clouds~~ <sup>clouds</sup>. Flocks  
 seem to spend hours (or all day?) at  
 a single road cut & stay within  
 100 yds & generally, tick to 1-5 yds  
 in air. Evening gathering is  
 spectacular: at this north termination  
 of the Koror little ridge is an <sup>inland</sup> lagoon  
 which is metropolis for Pteropus, Emballonura,  
Otus. At dusk the swifts begin to  
 gather there, augmenting the local  
 groups until several hundred are  
 there. They continue foraging <sup>low</sup> ~~even~~  
 while Emballonura are out, then  
 they begin to go higher, treetops, then  
 over the trees then swirl around  
 & ascend in a loose cloud. By  
 that time it's dark & the cloud  
 has disappeared over the ridge.

I always enjoyed watching a pair in

Oct, 1945 -

50.

Palau

Myzomela cardinalis

Common, all islands. Occurs in large trees or groves in open country. A single breadfruit tree may have 6 foraging in it - many of them imm. Im & F's outnumber M's I believe. Not recalled from heavy jungle. Much confusion due to similarity of calls to Aplonis (hence different from Marianas). On the Marianas, the notes are high, shrill & wheezy. On Palau the notes are just whistled tones at lower pitch many of them similar to Aplonis calls. Favor Coconut Palms, Breadfruit trees. ~~More abundant~~ Like all other ~~land~~ <sup>passerines</sup> birds, seems unusually abundant on Pelelin.

No breeding behavior, such as rising song perches noted - altho some specimens were in breeding condition (♀ laying).

Marshall, 1945

Palau

33

Collocalia eschscholtzii

the garden at our quarters in Koror. They are miniature <sup>swifts</sup> in every respect but speed & small power in it. This year I shot 1st round in a visit only 25-30 ft above ground. By the time I could stand at the net & they were just my head within inches on each tour. Mostly sail-constantly changing pitch of wings flutter to go up after a bug. A great habit is to dip wing after flutter so wings are vertical. Feed on very small flying insects. So it is, pairs for me & utter out like whistles & squeaks. trilling. No song.

Haleyon cinerascens

Rare saw 7, heard 2 more. Usually very quiet. Sits absolutely still in vines of understory of open natural forests. Won't move you can walk right up to them. Total observations: Melin: <sup>23 Nov</sup> pair perched on shore wire at side road <sup>the</sup> open area; <sup>Dec</sup> 5 pair at lg. dense tree in patch natural forest near airfield - heard ~~one~~ saw one dive from this big tree, followed its direction & located it in horiz vine 8 ft up in tall tree sitting quietly & watching me. Got it. Then heard what

Pulau

Colinus pectoratus

Lack of fixity to definite pattern of conduct is jay-like, suggesting emphasis on intelligent behavior at the expense of instinctive behavior.

Apparently at a different stage of breeding cycle Pelelin & N. Pulau

Aplonis opacus

Common, all islands, wherever tree-growth occurs. Evenly distributed throughout the jungles & forests in flocks up to 50 (rare) or more generally in small groups. Ind. often in flocks by themselves. Like to perch in bare limbs of dead trees. Calls <sup>slightly</sup> subtly different from Marianas. Singing rarely heard.

On Pelelin gather around cliffs & also found around camps.

- Not as abundant as at Guam - about same as Saipan & Timor.

Take long flights - over the lagoons & from ridge to ridge (Koror) (25 x 35).

Marshall, 17

Pulau

Haleyon cinereomarginatus

must have been its mate from the tall dense tree: chick-a chick-a, chick-a crreeeee, crreeeee crreeeee.

The "chick" is the same as the usual sharp cry of H. chloris (Saipan & Pulau) the 2nd syll is unique for this bird. The "cree" is the long drawing nasal every call typical of Guam cinereomarginatus and used by Pulau chloris [!!!!]. Saipan & Guam chloris don't have anything like this cry. It is the principal call of Guam & Pulau cin. and a secondary call of Pulau chloris [!]. Pulau 25 Nov:

in <sup>sm</sup> patch native trees near lagoon N. end looked up & one was sitting there catching me 3 ft away on hanging vine. Shot with sling shot but it got away.

Koror 21 Nov: Evening on top W. little ridge saw one sitting over my head in sm. tree. Shot it.

Babelthrap 30 Nov: Heard a pair giving the "cree" draws in flight, & located them at edge woods perched jointly on branch 5' off ground.

Shot one, then the other. They were posturing when first came up. 29 Nov heard the "cree" call in open part of jungle high on mountain.



Marshall, 1945

48.

Pulau

Colluricincla tenelrosa

among the branches.

Song: quality & structure of Black-headed Grosbeak more rushed and shorter duration. Very musical, loud & pleasing, but lacking through quality of robin. Clear loud and whistled. (Easy to imitate & does attract the bird).

Feeding: Pelelin 4 Dec. per a bird seen carrying a twig in its bill.

It would fly around its tree with this stick, go into the tree then come out & fly around with the stick again.

Never see them out in the open or away from densest forest under natural conditions (Koror, Babel).

Absent from 2nd growth forest on Babel. But on Pelelin

where there is not enough habitat to go around, you see the birds everywhere & they fly very low and swift (like a thrush) from one patch of trees to the next.

No set posture - the bird is continually craning its neck looking every which way.



Marshall, 1945

37.

Palau

Harlequin rule is

Common all islands. Principally in  
Casuarina trees along shores. Also  
common on telephone wires, Pilelin,  
Babelthrap, edges of mangrove lagoons Koror.  
Perches very high in the giant  
Casuarinas. Much less vigorous  
than at Saipan & Tinian. I did see  
the high-in-air performances, or  
the fighting & loud conversations.  
Call, described under cinn. is  
a rapping because the start of  
Guam & Palau cinn is used  
generally always following the  
main call of chick-chick,  
chick-chick, etc. (see record  
usually). Quality like chick but  
but not as sharp & loud as that  
of Marianas chick. By comparison  
this bird is subdued, altho I  
have seen 2-4 together when they  
get pretty noisy. Call all thru  
day (near camp, Koror). Always in  
open: trees at beach, phone wires  
on concrete, iron way, roadside,  
edges lagoons, etc. Not in jungle  
except to roost at night (9 Nov Koror  
one collected out of 4<sup>6</sup> shot at others  
looked on & could have been cinn. Very

Kalan

Colinus pectoratus

squawk at an intruder.

Habits: A very good parallel is the grey jay - small groups move around very silently are very curious gather to look at intruder have great variety of conversational notes, great vocal range, ~~sp~~ very docile & will sit very still watching you for minutes at a time. Sometimes they will come within 2 or 3 ft & peer at you. The habit of bending the mouth open tongue not visible when excited is remarkable.

Call Notes: conversational all varieties as in grey jay. squeaks, whistles, squeaks etc hard to describe any particular or typical one. Quality of the tone is the distinguishing character very tunny.

Song heard only once on Koro - early morning. Note ↑ Note → Heard all the time on Pulehin - including a remarkable pre-dawn chorus (then still dark) sounding like Robin Chorus. Sing all thru day but not as many as dawn. Song phrase is same as forage note - bird sings as it hops

Marshall, 1945

38.

Hirundo  
halcyon chloris

strange experience & all seemed up  
because I was on the side of a cliff  
shooting straight up. Each bird as  
I shot would fly gracefully away  
in the same direction. I could  
never even figure how many were there,  
& whether or not I was shooting at  
the same ones returning. One  
seen by flashlight in the Caprimulgus-  
Ptilinopus giant tree one night.  
Typical roost: under portion of the  
canopy of a large tree generally  
on a hairy vine.  
Nest in conspicuous places in  
open. About the call: my descr.  
may not make it obvious that the  
sharp notes are recognizably those  
of chloris of Sargian, with a few  
modifications. The early amazing  
thing is the "uplifting" quality of the  
announcing element which is  
a follow-up to the chick notes.  
Thereby replacing the "we have" notes  
used as follow-up by Martina's chris.

Hirundo rustica

Palau 27 Nov Christip 2, 29-30 Nov a dozen on  
phone wires at flat farmland - seen every time I

Marshall, 1945

46

Palau

Callurimicla tenelroza

Habitat: Natural dark heavy jungle - ridges of Koror, ~~islands~~ of Palau & undamaged woods on Pesean. (On Palau, like several other species which are unusually abundant there, this bird spills out of the natural habitat & is common in cultivated & vine tangles around the edges of the small patches of undamaged forest.

It is felt this is unusual & not the normal condition. It seems that at the ~~most~~ <sup>over</sup> most of Pesean has been wasted & replaced with vines, the birds have had a great increase in numbers & are found in more open habitats than is normally the case (shown at Koror & Palau). Nitch: ~~in branches~~ <sup>in branches</sup> and vines of middle tree-height under the jungle canopy. Very curious of human, & come to few ft of and to look at you - with bill constantly in the open. Hops around in branches much like the nitch of a Steller Jay. Abundance: (In jungle) Common but not evenly dispersed - occur in small groups - small 2-8 birds which do not keep close together, but are in the same neighborhood & assemble quickly, when one starts to

Marshall, 11/17/57

57.

Pulau

Hirundo sticticus

Hirundo rustica

passed there. I made quite an impression on my guide, Sgt Major Uzegami, by whacking the most adult-looking one off the wire with the sling-shot (he was also amazed when I clipped one with my 1st shot (38 amp) at the airstrip 27 Nov. That day I didn't miss a single shot & the Sgt. gave me quite a bird-days with the officers from whom I was supposed to get "permission" to collect on their island.) Pelau 1st wk Dec: Several noted at airfield.

Colaptes terrestris

#3212 <sup>1st Nov</sup> seen 6 Nov & 8 Nov seen perched in top of high dead tree nr. camp from which it made long, str. flights (after insects?) & returned to same perch just like Olive-sided Flycatcher. #3197 alone in breadfruit tree near above tree. Nest of lime d. eggs found in small flock: 5-6 birds. Warbler, and are not seen daily. Most usually seen in small trees & bushes at edge of jungle but sometimes are in the jungle or out in lg. trees in cultivated areas. seen on Pelau Lower Waterfall. Generally quiet & slow in movements. Perch noticeable for minutes. Most common in 2<sup>nd</sup> growth forest near airstrip - contact,

Marshall, 1945

Kalam

*Myiarchus cinerascens*

15.

conspicuous. Much of feeding is done in  
open foliage of medium sized trees  
where they hop among the twigs &  
dart out after insects. When  
returning to a perch they  
quiver the tail like an *Empidonax*.

Upright posture often perches  
on exposed twig in *Tyrannid* fashion.

Fixed territories - small area -  
a few adj. trees.

This bird a powerful flyer  
flies, man to advantage when going  
over water - from one mangrove to  
another. Straight and rapid.

More universal than *H. chrysus*  
in habitat tolerance - except absent  
from open country fields, etc.

Marshall, 1945

40

Pulma

Edolisoma tenuirostris

come out to edge of forest & hop around  
in interior of small trees in the open.  
Menters of jump very close. Often all are in  
same bush or on tree together. In some  
cases were found in just line in  
low & in some cases. Flies in wings  
easily as the move. Uncommon: ~~usually~~  
is more than 1 group in a day. Calls:  
soft series whistles: "whit" like R. b. thrush,  
and then repeated or varied, each time a  
series of three followed by series of  
repeated "whit" "whit" "whit" with timing  
quality.

Lulage monacha

Koror 6 Nov & 3 Dec: Rare - only 2 seen 1  
taken 6" in top foliage breadfruit where  
hopping around like vireo, 2nd taken in  
top dead tree next to this breadfruit where  
perched silently like a flycatcher. Looked  
like a Wood Pewee up on highest twig. These  
2 trees in cultivated area.

Psamthia unnae

Dakethnap 29 Nov None heard in forested area but  
into. but there at noon so maybe all  
were quiet. group of 6 or 7 seen in bushes edge  
mangrove lagoon 13 Nov far from any jungle. Call:  
a wren-like ratchet call. Palestin Very abundant



Marshall, 1945

44.

Telan

Myiagra oceanica

all islands - abundant wherever tree growth of any kind. Abundant, p. 1. Abundant in low jungle, mangrove lagoons, cultivated areas where there are trees & shade. A bird more often seen than any other sp. can be expected everywhere except grassland.

Very loud sharp man-like harsh call-  
notes - some similar to call notes of Canyon Wren. Calls often. Song heard less often very high whistle of 7 notes same pitch. Clear quality of Chickadee's <sup>Decomp to im</sup> song. In that respect 2 seem to differ from lower, yellower song of same Myiagra - as I recall also the latter's notes are inflected.

Pair all known 26 Nov beginning sit in mangrove 6' up. ♀ merely sat there in a fork & fluffed out feathers while ♂ watched.

These birds drive other species, especially Kingfishers away. They are noisy and



Marshall, 1944

41

*Myiophobus*

*Myiophobus* ~~the~~ annual

in all the vine tangles - birds were explored  
the forest. Sing from middle of the dense  
vine-covered bushes and make themselves  
up into vine covered trees, always keeping  
concealed. You hardly ever see this bird  
unless you hear dozens of them singing  
one spot. Koror: Common in actual  
jungle on the ridges. Prefer vine  
tangles either on bushes or high in  
trees. Sing, concealed from interior of  
these tangles. Sometimes come upon  
groups which come out where they can be  
seen & give various call notes, & can be  
seen from 1 clump vines to next.  
Usually, however, you only hear them not as  
bushes & are in vines as with a  
bottle - covered within, but "singing" distant  
through the jungle. Not on a road. Sometimes  
go into crowns of forest trees, but usually  
are hopping around on the vine tangles.  
Song like Varied Thrush, but most notes lower  
& much less distinct. Most times give single  
whistle. From higher trees (deciduous, etc.) will  
sing up to a whistled phrase of 5 notes  
which may be repeated rapidly & may  
even be extended into a long note without  
the whistles (early morning). Also used as  
call note by ♀ to male, (here). This phrase

March 1, 1941

43

Alcedo

Alcedo apfel

side. This is really a pair is  
together & done as display. The bird  
parades around a little with tail  
back over back & spread to maximum,  
then closes it & goes back to foraging

very tame & curious. Usually met  
with in this surprising pattern. You are  
watching them a bit & suddenly you  
hear the humming, adding notes & 1 or 2  
birds dash up, loop around you a while  
looking at you, then off they go to forage.

Strikingly different in notes, size,  
coloration from Marianas birds. Difference  
also in manner of fanning tail & I  
believe combined with its large size is a  
loss of some of the nimbleness & rapid  
moving of the little Marianas birds.  
I wouldn't be surprised if the former actually weighs  
twice as much as the latter.

Kalan

Parus parus parus  
 sounds are much like those of  
coelestis. During daytime parus  
 only the parus. This is very loud  
parus a very full penetrating  
 the not loud. Generally parus  
 in middle & parus parus  
parus the parus quality.

All sedentary bird. It spends hours  
 singing from one parus. parus  
 seen in flight. Rarely parus parus  
 foraging parus parus above 3 or 4 birds to parus.  
 Usually solitary, but parus parus parus  
 a few parus parus (Velelun). But very  
 active parus about in parus parus parus  
 solitary parus or parus parus parus.

Thipilura infifrens

All islands. Common, but parus parus  
parus & parus. Restricted to parus  
 heavy jungle parus parus parus  
parus & parus of parus, parus  
 occasionally parus into parus parus  
 of large trees. Pairs general, parus  
 an ad & 1 or 2 in parus, parus  
 in parus. (No parus parus parus  
parus). Call notes entirely different from  
 Marianas parus & harsh scolding, parus parus  
 notes often a succession of downy parus at parus parus

Nov. 11, 1965

~~Alcedo~~  
*Alcedo*  
*Alcedo* *inornatus*

itch. Every day in the night jungle  
 not as common as *Samanthia*. (1) Seen  
 & coll. in the quiet area. In the  
 individuals forage quickly thru the forest  
 at typical density. One to rapid flight  
 waiting after insects. Often go to the ground  
 & fly along fallen logs & stumps.

The first & one coll. on Koon  
 showed it had sideways a definite  
 movement when holding it, it  
 did it in a circle. None of  
 the others showed this deliberate bird.  
 The tail would often  
 side to one side or the other during the  
 birds' movements. So in general the do not  
 wag the tail. Tail more often closed than  
 fanned as birds are spent only at special  
 occasions & then done deliberately (singing  
 birds often pass with tail habitually spread),  
 & tail raised at high angle & fanned out very



Apr. 3, 1945  
#60



Apr. 3, 1945  
#62



Apr. 25, 1945  
#91

Reef Heron

Tinian

Genelly





















